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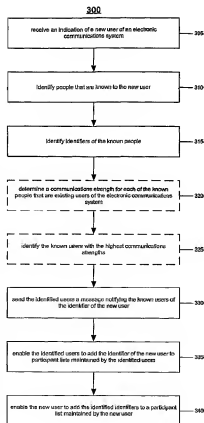
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[Continued on next page]

(54) Title: **PASSIVELY POPULATING A PARTICIPANT LIST WITH KNOWN CONTACTS**



(57) **Abstract:** Organizing a participant list includes maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system. Communications strengths between the first user and each of the users included in the participant list are determined. The users included in the participant list are organized based on the corresponding communications strengths. Communications strengths may be determined for users included in a group within the participant list, and the users within the group may be organized within the group based on communications strength. An additional group in the participant list in which some or all of the users included in the participant list are organized based on communications strength may be provided. Additional users may be added to the participant list, based on the communications strengths between the first user and the additional users. New users may be added to the participant list in response to notifications of the new users that are sent to the first user. Identifiers included in the participant list may be categorized into groups within the participant list based on attributes associated with the identifiers.

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**PASSIVELY POPULATING A PARTICIPANT LIST WITH KNOWN  
CONTACTS**

**TECHNICAL FIELD**

5           This document relates to passively populating participant lists of an electronic communications system and organizing the entries within the participant lists.

**BACKGROUND**

10           When a user first uses an electronic communications system, the user may be provided with a participant list to be used with the electronic communications system. The user may populate a participant list with identifiers of other users of the electronic communications system with which communication may occur through the electronic communications system. The task of manually populating the participant list may be inefficient, especially when a large number of other users are to be added to the  
15           participant list. The user also may desire to notify the other users that the user has become a new user of the electronic communications system. Manually doing so also may be burdensome when the number of other users is large.

          The user may not be involved in strong relationships with all of the users or may not communicate with all of the users included in the participant list. Furthermore, as  
20           users are continually added to the participant list, the participant list may include users with which the user no longer communicates or with which the user otherwise has a relationship with a low strength. The users included in the participant list having high strength relationships with the user may be mixed with users having low strength  
25           relationships with the user, which may prevent the user from easily identifying and accessing the users corresponding to high strength relationships, especially when the number of users corresponding to high strength relationships is small relative to the size of the entire participant list.

**SUMMARY**

30           In one general aspect, passively populating a list of participants of an electronic communications system includes maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system. Existing users of the electronic communications system that are known to the user are identified, and communications strengths between the user and each of the identified

existing users are determined. The identified existing users with the highest communications strengths are designated for addition to the participant list.

Implementations may include one or more of the following features. For example, the designated users with the highest communications strengths may be added to the participant list. A group within the participant list to which each of the designated users should be added may be identified. Identifying the group within the participant list may include creating the group within the participant list. Identifying a group within the participant list to which a designated user is to be added may include identifying a group within the participant list that includes users of the electronic communications system that share a characteristic with the designated user.

Identifying a group within the participant list to which a designated user is to be added may include identifying a group within a second participant list that includes the designated user. A group within the participant list that corresponds to the group within the second participant list may be identified as the group within the participant list to which the designated users should be added. The participant list may be a buddy list of an instant messaging system, the group within the participant list may be a category within the buddy list, the second participant list may be an address book of an e-mail system, and the group within the second participant list may be a category within the address book. Alternatively, the participant list may be an address book of an e-mail system, the group within the participant list may be a category within the address book, the second participant list may be a buddy list of an instant messaging system, and the group within the second participant list may be a category within the buddy list.

Identifying a group within the participant list to which a designated user is to be added may include identifying a group within the participant list that includes users of the electronic communications system that are associated with the designated user. Adding the designated users to the participant list may include adding each of the designated users to the corresponding identified group within the participant list. The participant list may be a buddy list of an instant messaging system, and the group within the participant list may be a category within the buddy list. Alternatively, the participant list may be an address book of an e-mail system, and the group within the participant list may be a category within the address book.

A number of users that may be added to the participant list may be determined. Adding the designated users to the participant list may include adding a number of the

designated users equal to the determined number of users to be added to the participant list.

The identified existing users may be sorted based on the corresponding communications strengths prior to designating the identified existing users with the highest communications strengths for addition to the participant list. Sorting the identified existing users may include ordering the identified existing users with higher communications strengths before the identified existing users with lower communications strengths.

Identifying the existing users that are known to the user may include identifying existing users known to the user that are not included in the participant list. Identifying the existing users that are known to the user may include identifying existing users of the electronic communications system that are included in a contact list maintained by the user as being known by the user. Identifying the existing users that are known to the user may include identifying people known to the user that are associated with an identifier used in the electronic communications system as being known to the user.

Determining communications strengths between the user and each of the identified existing users may include determining degrees of separation between each of the identified existing users and the user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users with the smallest numbers of degrees of separation from the user.

Determining communications strengths between the user and each of the identified existing users may include determining whether each of the identified existing users includes the user in a contact list maintained by the existing user and is included in a contact list maintained by the user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users that include the user in contact lists maintained by the identified existing users and that are included in a contact list maintained by the user before designating the identified existing users that do not include the user in contact lists maintained by the identified existing users or that are not included in a contact list maintained by the user.

Determining communications strengths between the user and each of the identified existing users may include determining a number of messages sent between the user and each of the identified existing users. Designating the identified existing users with the highest communications strengths may include designating the identified existing users with the highest numbers of messages exchanged with the user.

Determining communications strengths between the user and each of the identified existing users may include determining a frequency with which messages between the user and each of the identified existing users are exchanged. Designating the identified existing users with the highest communications strengths may include  
5 designating the identified existing users that exchange messages with the user with the highest frequencies.

Determining communications strengths between the user and each of the identified existing users may include determining whether each of the identified existing users is a direct or indirect addressee of messages from the user. Designating the  
10 identified existing users with the highest communications strengths may include designating the identified existing users that are direct addressees before designating the identified existing users that are indirect addressees.

Determining communications strengths between the user and each of the identified existing users may include determining whether the user subscribes to contact information for each of the identified existing users and whether each of the identified  
15 existing users subscribes to contact information of the user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users that are both subscribers to the user's contact information and publishers of contact information that is subscribed to by the user before designating the  
20 identified existing users that are not both subscribers to the user's contact information and publishers of contact information that is subscribed to by the user.

Determining communications strengths between the user and each of the identified existing users may include determining a frequency with which messages are exchanged in a chat room between the user and each of the identified existing users.  
25 Designating the identified existing users with the highest communications strengths may include designating the identified existing users that exchange messages in the chat room with the user with the highest frequencies.

Determining communications strengths between the user and each of the identified existing users may include determining amounts of time for which the user and  
30 each of the identified existing users have exchanged messages. Designating the identified existing users with the highest communications strengths may include designating the identified existing users that have exchanged messages with the user for the longest amounts of time.

Determining communications strengths between the user and each of the identified existing users may include determining amounts of contact information for the user held by each of the identified existing users and amounts of contact information for each of the identified existing users held by the user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users for which the user holds the largest amounts of contact information and that hold the largest amounts of contact information for the user.

Determining communications strengths between the user and each of the identified existing users may include determining whether each of the identified existing users both sends messages to the user and receives messages from the user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users that both send messages to the user and receive messages from the user.

Determining communications strengths between the user and each of the identified existing users may include determining communications strengths between each of the identified existing users and a different user. Designating the identified existing users with the highest communications strengths may include designating the identified existing users with the highest communications strengths with the different user.

The electronic communications system may be an instant messaging system, a chat system, or an e-mail system. The participant list may be a social network of the user.

In another general aspect, a graphical user interface is used to manage a list of users of an electronic communications system with which electronic messages may be exchanged. The graphical user interface includes a participant list display associated with a user of the participant list display that includes users of an electronic communications system. One or more of the users are included automatically in the participant list display as a result of being identified as being known to the user and having high communications strengths with the user.

Implementations may include one or more of the following features. For example, the participant list display may include groups that are associated with one or more of the users included in the participant list display. A group included in the participant list display may be associated with the one or more automatically included users.

The participant list display may be a display of a buddy list associated with an instant messaging system, or a display of an address book associated with an e-mail system.

In yet another general aspect, passively populating a list of participants of an electronic communications system includes maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system. Communications strengths between the user and existing users of the electronic communications system that are known to the user are identified. The identified communications strengths are used to populate the participant list for the user.

Implementations may include one or more of the following features. For example, the electronic communications system may be an instant messaging system, a chat system, or an e-mail system. The participant list may be a buddy list of an instant messaging system, an address book of an e-mail system, or a social network of the user.

In another general aspect, organizing a participant list includes maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system. Communications strengths between the first user and each of the users included in the participant list are determined. The users included in the participant list are organized based on the corresponding communications strengths.

Implementations may include one or more of the following features. For example, communications strength may be determined for users included in a group within the participant list. The users within the group may be organized within the group based on communications strength.

An additional group in the participant list in which the users included in the participant list are organized based on communications strength may be provided. An additional group in the participant list that includes the users included in the participant list with the highest communications strengths may be provided.

Organizing the users based on the corresponding communications strengths may include ordering the users with higher communications strengths before the users with lower communications strengths.

Determining the communications strengths between the first user and each of the users may include determining a degree of separation between the first user and each of the users included in the participant list user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the



determined degrees of separation. Organizing the users based on the determined degrees of separation may include sorting the users in order of increasing number of degrees of separation from the first user.

5       Determining the communications strengths between the first user and each of the users may include determining whether the users included in the participant list include the first user in contact lists maintained by the users and are included in a contact list maintained by the first user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determinations of whether the users include the first user in contact lists maintained by the users and are included in a contact list maintained by the first user. Organizing the users based on the determinations of whether the users includes the first user in contact lists maintained by the users and are included in a contact list maintained by the first user may include ordering the users that include the first user in contact lists maintained by the users and that are included in a contact list maintained by the first user before the users that do not include the first user in contact lists maintained by the users and that are not included in a contact list maintained by the first user.

20       Determining the communications strengths between the first user and each of the users may include determining a number of messages sent between the first user and each of the users included in the participant list. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined numbers of messages. Organizing the users based on the determined numbers of messages may include sorting the users in order of decreasing number of messages exchanged with the first user.

25       Determining the communications strengths between the first user and each of the users may include determining a frequency with which messages between the first user and each of the users included in the participant list are exchanged. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined frequencies. Organizing the users based on the determined frequencies may include organizing the users in order of decreasing frequency with which messages are exchanged with the first user.

30       Determining the communications strengths between the first user and each of the users may include determining whether each of the users included in the participant list is a direct or indirect addressee of a message from the first user. Organizing the users based on the corresponding communications strengths may include organizing the users based

on the determinations of whether each of the users is a direct or indirect addressee of a message from the first user. Organizing the users based on the determinations of whether each of the users included in the participant list is a direct or indirect addressee of a message from the first user may include ordering the users that are direct addressees before the users that are indirect addressees.

Determining the communications strengths between the first user and each of the users may include determining whether each of the users included in the participant list is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determinations of whether each of the users is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user. Organizing the users based on the determinations of whether each of the users is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user may include ordering the users that are both subscribers to the first user's contact information and publishers of contact information subscribed to by the first user before the users that are not both subscribers to the first user's contact information and publishers of contact information subscribed to by the first user.

Determining the communications strengths between the first user and each of the users may include determining a frequency with which messages are exchanged in a chat room between the first user and each of the users included in the participant list. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined frequencies. Organizing the users based on the determined frequencies may include sorting the users in order of decreasing frequency with which messages are exchanged in the chat room with the first user.

Determining the communications strengths between the first user and each of the users may include determining amounts of time for which the first user and each of the users have exchanged messages. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined amounts of time. Organizing the users based on the determined amounts of time may include sorting the users in order of decreasing amount of time for which messages have been exchanged with the first user.

Determining the communications strengths between the first user and each of the users may include determining amounts of contact information for the first user held by each of the users and amounts of contact information for each of the users held by the first user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined amounts of contact information. Organizing the users based on the determined amounts of contact information may include sorting the users in order of decreasing amount of contact information held for or by the first user.

Determining the communications strengths between the first user and each of the users may include determining whether each of the users both sends messages to the first user and receives messages from the first user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determinations of whether each of the users both sends messages to the first user and receives messages from the first user. Organizing the users based on the determinations of whether each of the users both sends messages to the first user and receives messages from the first user may include sorting the users such that users that both send messages to the first user and receive messages from the first user are ordered before users that do not both send messages to the first user and receive messages from the first user.

Determining the communications strengths between the first user and each of the users may include determining communications strengths between each of the users and a second user. Organizing the users based on the corresponding communications strengths may include organizing the users based on the determined communications strengths. Organizing the users based on the determined amounts may include sorting the users in order of decreasing communications strength.

The users with a communications strength below a minimum allowable communications strength may be removed from the participant list.

The participant list may be a buddy list of an instant messaging system, an address book of an e-mail system, or a social network of the first user. The electronic communications system may be an instant messaging system, a chat system, or an e-mail system.

In another general aspect, a graphical user interface is used to manage a list of users of an electronic communications system with which electronic messages may be exchanged. The graphical user interface includes a participant list display associated with a user of the participant list display that includes users of an electronic communications

system. The users are organized in the participant list display based on communications strengths between the user and each of the users.

Implementations may include one or more of the following features. For example, the participant list display may include groups that are associated with one or more of the users included in the participant list display. The one or more users associated with a group included in the participant list display may be organized within the group based on communications strengths between the user and each of the associated users.

The participant list display may include a group associated with the users included in the participant list display within which the associated users are organized based on communications strengths between the user and each of the associated users.

The participant list display may include a group associated with the users included in the participant list display that have high communications strengths with the user. The users associated with the group may be organized based on communications strengths between the user and each of the associated users.

The participant list display may be a display of a buddy list associated with an instant messaging system, or a display of an address book associated with an e-mail system.

In another general aspect, announcing new users of an electronic communications system includes receiving an indication of a new user of an electronic communications system. The new user has an identifier for the electronic communications system. Existing users of the electronic communications system that are known to the new user are identified. The identified existing users are sent a message notifying the identified existing users of the identifier of the new user.

Implementations may include one or more of the following features. For example, the identified existing users may be enabled to add the identifier of the new user to participant lists used by the identified existing users. The new user may be enabled to add identifiers of the identified existing users to a participant list of the electronic communications system used by the new user. The identifiers of the identified existing users may be determined.

Identifying the existing users that are known to the new user may include identifying identifiers of the electronic communications system that correspond to the identified existing users.

Identifying the existing users that are known to the new user may include identifying existing users that are included in a contact list maintained by the new user.

Identifying the existing users that are known to the new user may include identifying existing users of the electronic communication system that include the new user in contact lists maintained by the existing users and that are included in a contact list maintained by the new user.

5 Identifying the existing users that are known to the new user may include identifying existing users of the electronic communications system that are less than a maximum allowable number of degrees of separation away from the new user.

Identifying the existing users that are known to the new user may include identifying existing users of the electronic communications system with which the new  
10 user has exchanged more than a threshold number of messages.

Identifying the existing users that are known to the new user may include identifying the existing users of the electronic communications system that have exchanged messages with the new user at a frequency that exceeds a threshold frequency.

Identifying the existing users that are known to the new user may include  
15 identifying the existing users of the electronic communications system that are subscribers to contact information of the new user or publishers of contact information to which the new user subscribes.

Identifying the existing users that are known to the new user may include identifying the existing users of the electronic communications system that have  
20 exchanged messages with the new user in a chat room at a frequency that exceeds a threshold frequency.

Identifying the existing users that are known to the new user may include identifying the existing users of the electronic communications system that have exchanged messages with the new user for longer than a threshold amount of time.

25 Identifying the existing users that are known to the new user may include identifying the existing users of the electronic communications system for which the new user holds an amount of contact information that exceeds a threshold amount, or that hold the an amount of contact information for the new user that exceeds the threshold amount.

Identifying the existing users that are known to the new user may include  
30 identifying the existing users of the electronic communications system that that both send messages to the new user and receive messages from the new user.

Identifying the existing users that are known to the new user may include identifying the existing users of the electronic communications system that have a

communications strength with a different user that exceeds a threshold communications strength.

The participant list may be a buddy list of an instant messaging system, an address book of an e-mail system, or a social network of the user. The electronic communications system may be an instant messaging system, and the message notifying the existing user may be an instant message. The electronic communications system may be an e-mail system, and the message notifying the existing users may be an e-mail message. The electronic communications system also may be a chat system.

In another general aspect, a graphical user interface is used to manage a list of users of an electronic communications system with which electronic messages may be exchanged. The graphical user interface includes a participant list display associated with a user of the participant list display that includes users of an electronic communications system. One or more of the users are included automatically in the participant list display as a result of the user receiving indications identifying the one or more users as new users of the electronic communications system.

Implementations may include one or more of the following features. For example, the participant list display may include groups that are associated with one or more of the users included in the participant list display. A group included in the participant list display may be associated with the one or more automatically included users.

The participant list display may be a display of a buddy list associated with an instant messaging system, or a display of an address book associated with an e-mail system.

In another general aspect, categorizing users includes maintaining a list of identifiers that are selected by a first user and for which online presence information is made perceivable through the list. The list includes one or more categories into which the identifiers are categorized. At least one attribute associated with an identifier for which online presence information is to be made perceivable through the list is accessed. Attributes stored relative to at least one of the categories are accessed. The attributes associated with the identifier are compared to the stored attributes. Based on results of the comparison, at least one category within the list that corresponds to the identifier is identified, and the identifier is categorized into the identified category.

Implementations may include one or more of the following features. For example, identifying at least one category that corresponds to the identifier may include adding to the list a category to which the identifier corresponds.

Identifying at least one category that corresponds to the identifier may include identifying at least one category into which the identifier is not categorized that corresponds to the identifier.

5 Identifying an attribute of the identifier may include identifying an attribute associated with the identifier from a profile associated with the identifier. Identifying an attribute associated with the identifier from a profile associated with the identifier may include identifying an attribute of a user associated with the identifier from a profile of the user.

10 Accessing at least one attribute associated with the identifier may include accessing at least one indication of communications between the first user and the identifier or a user corresponding to the identifier. Accessing an least one indication may include accessing at least one indication from a group of indications comprising one or more instant messages sent between the first user and the identifier or a user corresponding to the identifier, e-mail messages sent between the first user and the  
15 identifier or a user corresponding to the identifier, and voice over Internet protocol (VoIP) telephone calls between the first user and the identifier or a user corresponding to the identifier.

Accessing at least one attribute associated with the identifier may include accessing a time at which the first user exchanges messages with the identifier or a user  
20 corresponding to the identifier. Identifying at least one category may include identifying at least one category reflecting identifiers of users with which the first user communicated within a period of time that includes the accessed time. Identifying at least one category may include identifying at least one category reflecting identifiers of users with which the first user communicated during a current day, a previous day, a previous week, or a  
25 previous month.

Accessing at least one attribute associated with the identifier may include accessing a frequency with which the first user exchanges messages with the identifier or a user corresponding to the identifier. Identifying at least one category may include  
30 identifying at least one category reflecting identifiers of users with which the first user communicated at a frequency within a range of frequencies that includes the accessed frequency. Identifying at least one category may include identifying at least one category reflecting identifiers of users with which the first user communicated at least a particular number of times a day, at least a particular number of times a week, or at least a particular number of times a month.

Accessing at least one attribute associated with the identifier may include accessing a length of one or more messages sent between the first user and the identifier or a user corresponding to the identifier. Identifying at least one category may include identifying at least one category reflecting identifiers with which the first user exchanged  
5 messages of lengths within a range of lengths that includes the accessed length. Identifying at least one category may include identifying at least one category reflecting identifiers with which the first user exchanged messages of at least a threshold length or at most a threshold length.

Accessing at least one attribute associated with the identifier may include  
10 accessing a location of a user corresponding to the identifier. Identifying at least one category may include identifying at least one category reflecting identifiers of users that are located at the accessed location.

Accessing at least one attribute associated with the identifier may include  
accessing at least one group within a second list of identifiers that are selected by a first  
15 user. The at least one accessed group may include the identifier. Identifying at least one category may include identifying at least one group within the list that corresponds to the at least one accessed group within the second list as the category. Accessing at least one group within the second list may include accessing at least one group within an address book of an e-mail system. Identifying at least one group may include identifying at least  
20 one group within a list of users of an instant messaging system for which presence is monitored that corresponds to the at least one accessed group within the address book. Accessing at least one group within the second list may include accessing at least one group within a list of users of an instant messaging system for which presence is monitored. Identifying at least one group may include identifying at least one group  
25 within an address book of an e-mail system that corresponds to the at least one accessed group within the list of users of the instant messaging system.

A request to categorize the identifier into at least one category included in the list based on at least one attribute associated with the identifier may be received from the first user.

30 The list of users may be an address book of an e-mail system.

The identifier may be at least one from a group including an online identity, a name, or an alias for an online identity.

The one or more categories within a subset of the categories may be mutually exclusive such that each of the identifiers may be categorized into at most one of the



subset of the categories. Categorizing the identifier into the identified category may include categorizing the identifier only into the identified category among the subset of categories.

The first user may be prompted to accept categorization of the identifier into the identified category. Categorizing the identifier may include categorizing the identifier in response to an indication that the first user accepts the categorization of the identifier into the identified category. The first user may be enabled to manually categorize the identifier when the first user does not accept the categorization of the identifier into the identified category.

These general and specific aspects may be implemented using a system, a method, or a computer program, or any combination of systems, methods, and computer programs.

Other features will be apparent from the description and drawings, and from the claims.

## DESCRIPTION OF DRAWINGS

FIG. 1 is a flow chart of a process for passively populating a participant list for a user of an electronic communications system with known contacts of the user.

FIGS. 2A-2C are illustrations of a participant list before (FIG. 2A) and after (FIGS. 2B and 2C) known contacts are automatically added.

FIG. 3 is a flow chart of a process for announcing a new user of an electronic communications system to existing users of the electronic communications system that are known to the new user.

FIGS. 4A and 4B are illustrations of notifications of a new user that are sent to other users.

FIGS. 5A and 5B are illustrations of a participant list before (FIG. 5A) and after (FIG. 5B) new users are automatically added.

FIG. 6 is a flow chart of a process for organizing entries of a participant list.

FIGS 7A-7C are illustrations of the participant list of FIG. 2A after the entries in the participant list are organized.

FIG. 8 is a block diagram of a communications system.

FIGS. 9 and 10 are expansions of the block diagram of FIG. 8.

FIG. 11 is a flow chart of another process for passively populating a participant list for a user of an electronic communications system with known contacts of the user.

FIGS. 12A-12B are illustrations of a participant list before (FIG. 12A) and after (FIG. 12B) known contacts are automatically categorized.

FIG. 13 is a screen shot illustration of a message displayed to a user upon identification of a category for a contact using the processes described herein, and  
5      availing the user of options to reject or recast such categorization.

Like reference symbols in the various drawings indicate like elements.

### DETAILED DESCRIPTION

A participant list of a communications system that is used by a first user is  
10      passively populated with identifiers of other users that are known to the first user. Doing so relieves the first user from having to manually add the identifiers of the other users to the participant list. Other users that are known to the first user are identified, and a strength of the relationship between the first user and each of the known users is determined. A portion of the known users (e.g., the known users with the strongest  
15      relationships) may be added to the participant list, particularly when all of the known users may not be added to the participant list. The known users may be identified from a contact list that is used by the first user. The known users that are added to the participant list may be added to the participant list in general, or to a specific group or groups within the participant list that may be created for the addition of the known users.

20      A participant list of an electronic communications system to be used by a first user may be organized based on the strengths of the relationships between the first user and the users included in the participant list. The users of the participant list may be ordered in the participant list based on strength of relationship. Alternatively or additionally, the users may be organized in a special group within the participant list and may be  
25      unchanged elsewhere. A portion of the users (e.g., the users included in the participant list corresponding to the strongest relationships with the first user) may be organized within the special group. Users with weak relationships may be removed from the participant list, because the first user is unlikely to attempt to communicate with those users. Organizing the users included in the participant list based on relationship strength  
30      enables the first user to quickly identify and access identifiers of the users included in participant list with which the first user is most likely to communicate.

When a user first becomes a user of an electronic communications system, a notification of an identifier of the new user within the electronic communications system is sent automatically to other users of the electronic communications system that are

known to the new user. In response to the notification, the known users are enabled to add the identifier to their participant lists associated with the electronic communications system. In addition, the new user may be enabled to add identifiers of the known users to a participant list maintained by the new user. The known users may be identified from a contact list that is used by the new user. A strength of the relationship between the first user and each of the known users may be determined, and a portion of the known users (e.g., the known users with the strongest relationships) may be notified of the new identifier. Sending such a notification prevents the new user from having to manually notify the known users of the new identifier and prevents the known users from having to manually add the new identifier to their personal participant lists.

A first user may exchange electronic messages with a second user, and the relationship between the first and second users with respect to the exchanging of electronic messages may be described by a communications strength between the first and second users. The communications strength between the first and second users is a numerical measure of the strength of the relationship between the first and second users with respect to exchanging electronic messages. Higher communications strengths typically correspond to stronger relationships. Communications strengths may be useful when comparing relationships while passively adding contacts to participant lists, announcing new membership to known contacts, or organizing participant lists. The communications strength between the first and second users also may be called the communications strength of the first user with respect to the second user, the communications strength of the second user with respect to the first user, or more simply the communications strength of the first or second users.

A calculation of the communications strength between the first and second users may consider the number of messages that are exchanged between the first and second users, and a higher number of messages may correspond to a higher communications strength. Similarly, the calculation may consider the frequency with which messages are exchanged between the first and second users, and a higher frequency may correspond to a higher communications strength. In implementations where the first and second users are users of a chat room, the calculation may consider the frequency with which messages are exchanged between the first and second users in the chat room, and a higher frequency of messages exchanged in the chat room may correspond to a higher communications strength.

The time over which messages are exchanged by the first and second users may affect the communications strength between the first and second users. In general, a longer amount of time over which the first and second users exchange messages may correspond to a higher communications strength. For example, the communications strength between the first and second users may be higher when the first and second users exchange a lower number of messages over a longer period of time than when the first and second users exchange a higher number of messages over a shorter period of time. Similarly, the communications strength may be higher when the first and second users exchange messages with a lower frequency for a longer period of time than when the first and second users exchange messages with a higher frequency for a shorter period of time. In general, exchanging messages over a longer period of time may indicate that the first and second users have a stronger, more enduring relationship.

A calculation of the communications strength between the first and second users may consider only messages sent between the first and second users with the electronic communications system, or all types of messages sent between the first and second users. For example, in implementations where the electronic communications system is an instant messaging system, the communications strength between the first and second users may depend on the instant messages sent between the first and second users, or the communications strength may depend on all communications between the first and second users, including, for example, instant messages, e-mail messages, and cellular telephone calls.

Alternatively or in addition to using the exchanging of electronic messages to measure communications strength between users, whether or not a first user and a second user each list each other in respective contact lists, such as address books, buddy lists, e-mail distribution lists, social networks, mobile telephone phone books, lists of members of an organization, and/or white lists, may be considered when calculating the communications strength between the first and second users. Inclusion in respective contact lists may be indicative of a strong relationship between the first and second users. As a result, a high communications strength may be assigned when the first user is listed in a contact list used by the second user and when the second user is listed in a contact list used by the first user. Each contact list may be a contact list that includes a single user's contacts, or a global contact list that includes multiple users' contacts. A lower communications strength may be assigned when only one of the first and second users lists the other user in a contact list used by the first or second user. An even lower

communications strength may be assigned when neither the first nor the second user includes the other user in a respective contact list. The type of contact lists that include the first or second users may affect the communications strength. For example, a higher communications strength may be assigned when the first and second users are listed in mobile telephone phone books than when the first and second users are listed in white lists. Such a communications strength may be assigned because adding the first and second users to the mobile telephone phone books may be harder and may require more effort by the first and second users than adding the first and second users to the white lists.

The calculation of the communication strength also may consider the amount and type of contact information that the first and second users have for one another. The communications strength may be directly related to the amount of contact information that the first and second users have for one another. For example, a higher communications strength may be assigned when the first user has both work and home contact information for the second user than when the first user only has work or home contact information for the second user. As another example, a higher communications strength may be assigned when the second user has home contact information for the first user than when the second user has work contact information for the first user. Such a consideration may be particularly important when the second user typically communicates with the first user when the first user is at home.

The calculation of the communications strength also may consider the degree of separation between the first and second users. The degree of separation between the first and second users describes a relationship between the first and second user. A low degree of separation between the first and second users may indicate a close, and consequently strong, relationship. Typically, user contact lists are evaluated to determine the number of degrees (or hops) that are required to link or relate the first and second users. For example, user A may list user B in user A's address book, user B may list user C in user B's address book, and user C may list user D in user C's address book. Here, user D is linked to user A by two degrees of separation (with user B as the first degree and user C as the second degree). User A is related to user C by one degree of separation (user B) and user B is separated from user D by one degree of separation (user C). Users A and B, users B and C, and users C and D are each respectively separated by zero degrees of separation. In general, a smaller degree of separation may correspond to a higher communications strength.

Whether or not the first and second users are direct or indirect addressees of messages sent between the first and second users may be considered when calculating the communications strength between the first and second users. The first and second users being direct addressees of the messages may be indicative of a strong relationship  
5 between the first and second users. The first user may be called a direct addressee of a message from the second user when the message is received directly from the second user, and the first user may be called an indirect addressee of the message when the message is received from the second user through one or more other users. In general, the number of other users through which the message is received is inversely proportional to  
10 the communications strength between the first and second users.

Alternatively or additionally, in implementations where the messages sent between the first user and the second user are e-mail messages, whether the first and second users are listed in the "To," "Carbon Copy," or "Blind Carbon Copy" fields of the e-mail messages may indicate whether the first and second messages are direct or indirect  
15 addressees. For example, if the second user is listed in the "To" field of an e-mail message sent by the first user, the second user may be a direct addressee of the message. If the second user is listed in the "Carbon Copy" or "Blind Carbon Copy" fields of the e-mail message, the second user may be an indirect addressee of the message. A higher communications strength may be assigned when the first or second users are direct  
20 addressees than when the first or second users are indirect addressees. The number of times that the first and second user are direct or indirect addressees may affect the communications strength, with the communications strength being directly related to the number of times that the first and second user are direct or indirect addressees.

Similarly, whether or not the first and second users are both senders and recipients  
25 of messages sent between one another may be considered when calculating the communications strength between the first and second users. The first and second users being both senders and recipients of the messages may be indicative of a strong relationship between the first and second users. A higher communications strength may be assigned when both the first and the second users are both senders and recipients of the  
30 messages. A lower communications strength may be assigned when both the first and second users are not both senders and recipients of the messages, which may occur when the first user sends messages to the second user and does not receive messages from the second user in response, or vice versa.

The first and second users may publish personal contact information, and the first and second users may subscribe to the published contact information. More particularly, the first user may subscribe to contact information published by the second user, and the second user may subscribe to contact information published by the first user. When a user subscribes to published contact information, any changes to the published contact information are automatically propagated to the user. Subscribing to each other's contact information may be indicative of a strong relationship between the first and second users. Therefore, a high communications strength may be assigned to the relationship between the first and second users when the first and second users subscribe to each other's contact information. A lower communications strength may be assigned to the relationship when only one of the first and second users subscribes to the other user's published contact information. An even lower communications strength may be assigned when neither of the first and second users subscribes to each other's contact information.

Other characteristics of the first and second user or their communication behavior may be considered when calculating the communications strength between the first and second users. For example, a type of relationship between the first and second user may affect the communications strength between the first and second user. For example, in one implementation, a higher communications strength may be assigned if the first and second users are family members than if the first and second users are business contacts.

One or more of the above characteristics of the relationship may be included in a calculation of the communications strength between the first and second users. For each of the included characteristics, a numerical measure corresponding to the characteristics is identified. The numerical measure of a characteristic may be a raw measurement of the characteristic or some other numerical value representative of the characteristic. The communications strength may be calculated from the numerical measures of the characteristics using, for example, a weighted average or some other function of the numerical measures of the characteristics.

In some implementations, the communications strength between the first and second users may depend on the communications strength between the first user and a third user, or on the communications strength between the second user and the third user. For example, a relationship may not have been established between the first and second users, which may prevent the calculation of the communications strength between the first and second users. The relationship between the third user and the first or second user may be similar to the expected relationship between the first and second users. For

example, the first user may be a new employee of a company that already employs the second and third users. The first user may be working with the second user in a similar manner as the third user, so the relationship between the second and third users may model the expected relationship between the first and second users. As a result, the communications strength between the second and third users may represent the expected communications strength between the first and second users. The communications strengths of the third user with the first or second users may be calculated as described above. The communications strength between the second and third users also may be combined with the communications strength between the first and second users that is calculated as described above. In some implementations, the communications strengths between the second user and multiple other users may be combined with the calculated communications strength between the first and second users.

In some implementations, the first user or the second user may use multiple identifiers when communicating over the electronic communications system. For example, the first user may have two identities that are both used to communicate with the second user. A separate communications strength may be calculated for each of the identifiers. The separate communications strength for a particular identifier describes the relationship between the first user and the second user when communicating with the particular identifier. The overall communications strength between the first and second user may be calculated by combining the separate communications strengths for each of the multiple identifiers. For example, a weighted average of the separate communications strengths may be used to combine the separate communications strengths into the overall communications strength between the first and second users.

The communications strength between the first and second users may be calculated in real time as the first and second users communicate. For example, each time a message is sent between the first and second users, a calculation of the communications strength may be performed. Alternatively or additionally, the communications strength may be determined after the messages have been exchanged. For example, logs of the messages sent between the first and second users, such as an e-mail log or an instant message log, may be inspected and processed to determine the communications strength. Other information indicative of the relationship between the first and second users may be processed when calculating the communications strength.

Referring to FIG. 1, a process 100 is used to passively populate a participant list to be used by a user of an electronic communications system with other users of the



electronic communications system. The process 100 identifies other users of the electronic communications system that are known to the user and adds identifiers of those known users to the participant list. If all of the known users may not be added to the participant list, a portion of the known users (e.g., the known users that have the highest communications strengths) is added to the participant lists. Identifiers of the known users may be added to the participant list in general, or to specific groups within the participant list. The process 100 may be executed when the user first becomes a user of the electronic communications system, periodically on a recurring basis, or after an indication to execute the process 100 is received from the user.

The process 100 begins by maintaining a participant list to be used by the user of the electronic communications system (105). The participant list is maintained for use by the user such that the user may use the participant list to communicate with the other users included in the participant list. The participant list includes one or more identifiers of other users of the electronic communications system, and the other users typically are the other users with whom the first user commonly communicates. The first user may select an identifier from the participant list to address a message to be sent with the electronic communications system to the corresponding user. The identifiers included in the participant list may be separated into one or more groups that categorize or otherwise organize the other users.

Other people that are known to the user are identified (110). The known people may be identified from a contact list that includes contact information for people with whom the user may communicate. People included in the contact list are inferred to be known by the user. Examples of the contact list include a buddy list of an instant messaging system, an e-mail address book of an e-mail system, an e-mail distribution list, a list of people in the user's social network, a list of people in a phone book of a mobile telephone used by the user, a list of members of an organization that includes the user, and a white list of people from whom communications are allowed. The contact list may be maintained by the user himself, or by another person or a central system on behalf of the user. For example, the user may be an employee of a company, and the contact list may be a list of e-mail addresses of all employees of the company that is maintained by the company. The user may access and use the contact list from the central system, or the user may use a copy of the contact list that is stored on a computer system used by the user. In one implementation, the set of people known to the user is filtered to include only the people known to the user that are not already included in the participant list.

The known people that are existing users of the electronic communications system are identified (115). In one implementation, identifying the known people that are existing users of the electronic communications system may include identifying identifiers of the known people in the electronic communications system. Identifying the identifiers of the known people may implicitly indicate whether each of the known people is a user of the electronic communications system. More particularly, if an identifier for one of the known people in the electronic communications system may not be identified, then it may be assumed that the known person is not an existing user of the electronic communications system. The known person may be sent an invitation to join the electronic communications system using the information in the contact list.

In some implementations, the contact list includes an indication of the identifiers of the known users in the electronic communications system, and identifying the identifiers of the known people may include identifying the identifiers from the contact list. If the contact list does not include an identifier for a known person, then it may be assumed that the known person is not a user of the electronic communications system. In other implementations where the contact list does not include the identifiers, the identifiers may be otherwise determined. For example, contact information in the contact list may be used to identify the identifiers for the known people. For instance, the participant list may be a buddy list of an instant messaging system and the contact list may include e-mail addresses of the known people that are not identifiers of the known people in the instant messaging system. However, the instant messaging system may maintain a mapping of e-mail addresses to identifiers, and the e-mail addresses may be used to identify the corresponding identifiers from the mapping. If the mapping does not include an identifier for an e-mail address of a known person, then it may be assumed that the known person is not a user of the instant messaging system. Other contact information, such as, for example, a phone number, a name, and/or an address, may be used to identify the identifiers for the known people. For example, a system may maintain a mapping of other contact information to identifiers, and the other contact information may be used to identify the corresponding identifiers from the mapping.

Communications strengths are determined for each of the known people for which an identifier in the electronics communications system has been identified (120). The communications strengths may be calculated from one or more characteristics of the relationship between the user and each of the existing users, as described above. Alternatively or additionally, the communications strengths may be indicated by the

contact list from which the known people were identified. For example, the contact list may be organized such that the communications strengths of the included people are indicated by the positions of the included people within the contact lists. The existing users may be sorted based on the communications strengths that have been determined (125). Sorting the existing users by corresponding communications strength may help in determining which of the existing users are added to the participant list.

In other exemplary implementations, communications strengths may be determined between the user and the people known to the user, and the known people that are existing users of the communications system then may be identified.

A number of the existing users that may be added to the participant list may be determined (130). The participant list may have a maximum capacity, such that the participant list does not have sufficient space for all of the known people for which identifiers have been identified. In such a case, the number of existing users that may be added to the participant list is the number of remaining spaces in the participant list. Alternatively or additionally, the number of existing users that may be added may depend on the corresponding communications strengths. For example, a particular number of existing users may be determined because adding more existing users to the participant list may result in the addition of existing users with a communications strength that is lower than desired.

The known people corresponding to the highest communications strengths are identified for addition to the participant list (135). For example, a number of the known people with the highest communications strengths equal to the maximum allowable number of additions to the participant list may be identified for addition to the participant list. In implementations where a number of allowable additions is not determined, all of the existing users may be identified for addition to the participant list.

A group within the participant list to which each of the existing users is to be added may be created (140). For example, a special group may be created within the participant list for users that have been passively added to the participant list with the process 100. Alternatively or additionally, a group may be created for users in the participant list that have a certain characteristic. For example, a group may be created within the participant list for co-workers of the user because one or more of the known people to be added are determined to be co-workers of the user, and such a group is not already included in the participant list.

Alternatively or additionally, an existing group in the participant list to which each of the existing users is to be added may be identified (145). The existing group may be identified because one or more of the users of the existing group share a characteristic with each of the existing users to be added to the group, or because one or more of the users of the existing group are otherwise associated with each of the existing users. Alternatively or additionally, the existing group may be identified for each of the existing users because each of the existing users is included in a corresponding group in another contact list, such as the contact list that indicated that the existing users are known to the user.

In order to identify or create groups for the known people that have been identified for addition to the participant list, additional information describing the known people may be accessed. The additional information may identify characteristics of the known people that may be useful in identifying groups to which the known people should be added. In one implementation, profiles of the known people in the electronic communications system are accessed for use in identifying or creating groups to which the known people should be added.

The existing users that have been identified for addition to the participant list are then added to the participant list (150). In implementations where groups within the participant list have been identified for each of the existing users, the existing users are added to those groups. In implementations where groups have not been identified, the existing users are simply added to the list in general or to a default group within the list. For example, the existing users may be added to a general user group within the participant list.

In some implementations, the user of the electronic communications system whose participant list is maintained with the process 100 may use multiple identifiers when communicating over the electronic communications system. For example, the user may have a business identifier that is used with communicating during business hours or with business contacts, and a family identifier that is used when communicating with family members. The multiple identifiers may be linked such that the user may communicate using more than one of the multiple identities at a time. Furthermore, the user may maintain a participant list for each of the multiple identities. The participant list for a particular identifier may include other users with whom the user communicates using the particular identifier. For example, the participant list for the business identifier of the user may include the business contacts of the user, and the participant list for the

family identifier may include the family member of the user. The participant lists for each of the multiple identities may be conglomerated into a single participant list that is maintained with the process 100.

When an existing user that is known to the user is added to the single participant list for the user during the process 100, an appropriate participant list within the single participant list for the existing user may be identified. For example, the existing user may be determined to be a business contact of the user, so the existing user may be added to the participant list corresponding to the business identifier of the user. The appropriate participant list for the existing user may be identified in a similar manner to how appropriate groups were identified or created for each of the identified users to be added to the participant list (140, 145).

In some implementations of the process 100, people known to the user that are not existing users of the electronic communications system may be added to the participant list of the user. When a person that is not an existing user of the electronic communications system is added to the participant list of the user, the person may be enabled to use the electronic communications system to communicate with the user. For example, the person may be made a trial user of the electronic communications system when the person is added to the participant list of the user with the process 100. The person then may choose to become a full user of the electronic communications system after being a trial user.

Referring to FIG. 2A, a buddy list interface 200 for a given user displays the screen names of other selected users of an instant messaging system with which the given user regularly communicates. The other selected users form a buddy list for the given user. Communications with one of the other selected users may be initiated through selection of the corresponding screen name for the other user from the buddy list. The other users may have been added to the buddy list by the given user manually using identifiers of the other users in the instant messaging system that are known to the given user at the time of addition. More particularly, the buddy list interface 200 illustrated in FIG. 2A may be presented to the given user before the process 100 of FIG. 1 is executed for the given user.

The buddy list interface 200 includes a text box 205 that contains the buddy list for the given user, who is identified by a screen name "AOLUser," as indicated in the title bar 203 of the buddy list interface 200. The buddy list in the buddy list interface 200 includes multiple screen names 210a-210e. More particularly, the buddy list includes the

screen name "Friend1" 210a, the screen name "Friend2" 210b, the screen name "Mom" 210c, the screen name "Dad" 210d, and the screen name "Sister" 210e.

The screen names within the buddy list shown by buddy list interface 200 are organized into multiple buddy groups 215a-215c. Each screen name within the buddy list is associated with at least one of the buddy groups 215a-215c. The buddy list includes a "Buddies" buddy group 215a, a "Family" buddy group 215b, and an "Offline" buddy group 215c. The screen name 210a appears below the heading for the buddy group 215a because the screen name 210a has been associated with the buddy group 215a and the corresponding user is present, that is, logged into the instant messaging system and available to send and receive instant messages. The heading for each of the buddy groups 215a and 215b indicates the number of buddies in the group currently logged into the instant messaging system, as well as the total number of buddies in the group. For example, two out of the two members of the buddy group 215a are logged into the instant messaging system for which the buddy list interface 200 is displayed. Similarly, the heading for the "Offline" buddy group 215c indicates the number of other users on the buddy list that are not logged into the system (i.e., 0) and the total number of buddies on the buddy list (i.e., 5). Typically, when users log into the instant messaging system, screen names of the users are moved from the "Offline" buddy group 215c to one of the other buddy groups 215a or 215b.

The buddy list interface 200 also includes controls 220 that enable the given user to communicate with the other selected users corresponding to the screen names 210a-210e. For example, the given user may send instant messages, chat invitations, or e-mail messages to the communications identities referenced in the buddy list through use of the controls 220. The controls 220 also enable the user to obtain information describing the other users, as well as to modify the set of other users referenced in the buddy list interface 200.

The buddy list interface 200 also includes controls 225 that enable the given user to access other information not directly related to sending and receiving instant messages. For example, the given user may use the controls to access e-mail messages or other special features of the instant messaging system. The given user also may use the controls 225 to modify preferences for the buddy list interface 200.

Referring also to FIGS. 2B and 2C, the buddy list displayed in the buddy list interface 200 may be augmented with additional screen names after the process 100 of FIG. 1 is executed for the given user to automatically add screen names of other users

known by the given user to the buddy list. More particularly, a screen name 210f, "Friend3;" a screen name 210g, "Brother;" and a screen name 210h, "Boss" have been added to the buddy list interfaces 200 illustrated in FIGS. 2B and 2C. The users corresponding to the screen names 210f-210h are existing users of the instant messaging system and are known to the given user. The screen names 210f-210h may be added to general or specific groups within the buddy list interface 200. The screen names 210a-210e remain associated with the same respective buddy groups 215a and 215b as before the process 100 was executed.

In some implementations of the buddy list interface 200, one of the buddy groups 215a and 215b may be designated as a default buddy group to which screen names are added when different groups for the screen names are not specified. For example, in the buddy list interface 200 illustrated in FIG. 2B, the buddy group 215a was designated as the default buddy group, and the screen names 210f-210h were automatically added to the buddy group 215a during the execution of the process 100. The screen names 210f-210h were added to the buddy group 215a because a specific group was not identified for the screen names 210f-210h during the process 100.

Alternatively or additionally, specific groups to which the screen names 210f-210h are to be added may be identified during the process 100. The screen names 210f-210h may be added to one or more groups in the buddy list, and the one or more groups in the buddy list may need to be created before the screen names 210f-210h may be added, as is illustrated in the buddy list interface 200 of FIG. 2C. In FIG. 2C, the screen name 210f has been added to the default buddy group 215a, either because the buddy group 215a was explicitly identified as the group to which the screen name 210f was to be added, or because a group to which the screen name 210f was to be added was not identified.

The screen name 210g "Brother" was added to the buddy group 215b named "Family." The screen name 210g may be added to the buddy group 215b because the user corresponding to the screen name 210g may share a characteristic or may be otherwise associated with the users corresponding to the other screen names 210c-210e included in the buddy group 215b (i.e., they are family members of the given user). The screen name 210g also may be added to the buddy group 215b because the user corresponding to the screen name 210g may be included in a corresponding group in another contact list, such as the contact list that was used during the process 100 to identify the user as being known to the given user.

The screen name 210h "Boss" has been added to a new buddy group 215d called "Co-Workers." The user corresponding to screen name 210h is the only member of the new buddy group 215d and is presently logged into the instant messaging system, as indicated in the heading of the buddy group 215d. The buddy group 215d may be created  
5 for users corresponding to screen names in the participant list that have a certain characteristic, including the user corresponding to the screen name 210h (i.e. they are co-workers of the given user). As such, the buddy group 215d is created for the user corresponding to the screen name 215h. Other users that are co-workers of the given user may have their screen names added to the buddy group 215d of the participant list later.

The given user may be presented with a notification that screen names are being added automatically to the buddy list displayed in the buddy list interface 200. The given user may be enabled to accept the screen names to be added such that the automatically added screen names become visible in the buddy list interface 200. Alternatively, the given user may dismiss the screen names to be added, in which case, the screen names are  
15 not added to the displayed buddy list and are not visible in the buddy list interface 200. The given user also may be enabled to accept some of the screen names to be added and dismiss others of the screen names to be added.

Referring to FIG. 3, a process 300 is used to announce a new user of an electronic communications system to other users of the electronic communications system that are  
20 known to the new user. The process 300 identifies other users of the electronic communications system that are known to the user and notifies the known users that the new user has joined the electronic communications system. In one exemplary implementation, only the known users that have high communications strengths with the new user may be sent notifications. The known users are enabled to add an identifier of  
25 the new user to participant lists for the electronic communications system used by the known users. In addition, the new user may be enabled to add identifiers of the known users to which notifications were sent to a participant list used by the new user. The process 300 may be executed when the new user first joins the electronic communications system, or at some time thereafter.

The process 300 begins upon receipt of an indication that there is a new user of  
30 the electronic communications system (305). Such an indication may be received, for example, when the new user provides the electronic communications system with personal information, such as a name, address, and phone number, or billing information, such as a credit card or bank account number, that indicates that the new user is joining



the electronic communications system. When the new user first joins the electronic communications system, the new user chooses or is assigned an identifier that is used to address messages sent to and from the new user within the electronic communications system. In addition, a participant list may be provided to the new user for use with the electronic communications system. The new user may access identifiers of other users of the electronic communications system that have been added to the participant list to address messages to be sent over the electronic communications system to the other users.

People that are known to the new user are identified (310). The known people may be identified from a contact list that includes contact information for people with whom the new user may communicate, as is done in the process 100 of FIG. 1. Identifiers of the known people are identified (315). Identifying the identifiers of the known people may include directly or indirectly identifying the identifiers from the contact information included in the contact list, as is done in the process 100 of FIG. 1. Identifying an identifier for a known person may indicate that the known person is an existing user of the electronic communications system.

Communications strengths may be determined for each of the known people that is an existing user of the electronic communications system (320). The communications strengths may be calculated from one or more characteristics of the relationship between the new user and each of the existing users, as described above. Alternatively or additionally, the communications strengths may be indicated by the contact list from which the known people was identified, as described above. The known users with high communications strengths may be identified (325). More particularly, the known users with communications strengths above a threshold value that is indicative of a high communications strength may be identified.

The identified users of the electronic communications system may be sent a message that notifies the identified users of the identifier of the new user (330). The previously identified identifiers of the identified users may be used to address the notifications to the identified users. The notification may be sent as a type of message typically sent with the electronic communications system. For example, when the electronic communications system is an instant messaging system, the notifications may be sent as instant messages. As another example, the electronic communications system may be an e-mail system, and the notifications are sent as e-mail messages.

The identified users are enabled to add the identifier of the new user to participant lists used by the identified users (335). In some implementations, the notifications may

include an indication of the identifier of the new user and a control that automatically adds the identifier of the new user to the participant lists of the identified users. The control may be a button or a link within the notification that may be selected. In other implementations, the identifier may be added to the participant lists when a response to the notifications is received. For example, when the notifications are sent to the identified users as instant messages, the identifier may be added to the participant lists when affirmative responses to the instant messages are received. In other implementations, the identified users may manually add the identifier to the participant lists when the notifications are received.

The new user is enabled to add the identified identifiers to the participant list that is used by the new user (340). The identifiers may be identified and added to the participant list through execution of the process 100 of FIG. 1. In one implementation, the identifiers of the known people that were sent notifications are added to the participant list. In another implementation, identifiers of all known people are added to the participant list. The new user also may be enabled to manually add the identified identifiers to the participant list.

In some implementations, each of the existing users of the electronic communications system that are known to the new user may use multiple identifiers when communicating over the electronic communications system. The multiple identifiers may be linked such that each of the existing users may communicate using more than one of their multiple identities at a time, and a participant list may be maintained for each of the multiple identities. The participant lists for each of the multiple identities used by an existing user may be conglomerated into a single participant list for the existing user. When an existing user that is known to the new user is enabled to add an identifier of the new user to the single participant list for the existing user, a participant list within the single participant list for the existing user that is appropriate for the addition of the new user may be identified.

Referring to FIG. 4A, a message notifying a user of an instant messaging system of an identifier of a new user of the instant messaging system is displayed in an instant messaging interface 400. Instant messages may be sent and received with the instant messaging interface 400. For example, the instant messaging interface 400 may be used to exchange communications with a user whose screen name is displayed on a buddy list interface, such as the buddy list interface 200 of FIG. 2A. After a sender of instant messages is notified that a recipient is present and available to send and receive instant

messages, the sender may use the Instant messaging interface 400 to exchange instant messages with the recipient.

The instant messaging interface 400 includes a message history box 405 that lists the instant messages sent between the sender and the recipient. The message history box 405 also may be referred to as a message transcript box 405. Each message is presented with an indication of a screen name by which the sender or the recipient is identified as the sender of the message. Each message listed in the message history box 405 also includes the text of the instant message sent by the sender or the recipient. For example, the message history box 405 includes a message 406 sent by a user with a screen name "SystemMessage" and a message 407 sent by a user with a screen name "ExistingUser." In one implementation, each message listed in the message history box 405 includes a time stamp of when the message was sent. The users that sent the messages 406 and 407 are the recipient and the sender, respectively.

The instant messaging interface 400 also includes a message specification box 410 in which the sender may specify a message to be sent to the recipient. The sender may enter text to be sent to the recipient in the message specification box 410. The instant message interface 400 includes a set of format controls 415 that may be used to format the text entered in the message specification box 410. More particularly, the controls in the set of format controls 415 enable the user to change the size, foreground color, background color, style, and effects of the text entered in the message specification box 410. The set of format controls 415 also includes controls for inserting objects that are not plain text, such as hyperlinks and emoticons, into the message specification box 410.

After a message has been specified in the message specification box 410, the message may be sent by selecting a send button 425 included in a second control set 420. After the send button 425 has been selected, the text that has been entered in the message specification box 410 is sent to the recipient, and the message specification box 410 is cleared. The message is added to the message history box 405. The message also is displayed in a message history box 405 of an instance of the instant messaging interface 400 being viewed by the recipient. Also included in the second control set 420 are controls for warning instant message senders, blocking instant messages from particular senders, or adding the sender to a participant list used by the sender.

The recipient with the screen name "SystemMessage" may be an instant messaging robot that automatically sends notifications of new users to existing users that are known to the new users, and the sender with the screen name "ExistingUser" may be

one of those known existing users. The message 406 is a notification of a screen name of a new user of the instant messaging system that knows the sender. For example, the new user is named "John Smith" and has chosen "JohnSmith1" as a screen name to be used to identify himself in the instant messaging system. The message 407 is an affirmative response to the notification message 406. Upon receiving the affirmative response, the recipient (SystemMessage) automatically adds the screen name of the new user to a buddy list maintained for use by the sender (ExistingUser) such that the sender may select the new user's screen name to address instant messages to the new user.

Referring to FIG. 4B, a notification interface 450 notifies an existing user of an electronic communications system, such as an e-mail system, of an identifier of a new user of the electronic communications system, such as an e-mail address of the new user. The notification interface 450 also enables the existing user to import the identifier into a list of contact information, such as an e-mail address book, that is used by the existing user.

The notification interface 450 includes a message 455 that informs the existing user of the identifier of the new user. For example, the message 455 illustrated in FIG. 4B informs the existing user that the new user is a new user of the e-mail system and that the new user's e-mail address is "JohnSmith@domain.com."

The notification interface 450 also includes an accept button 460 that enables the existing user to import the e-mail address of the new user into an e-mail address book used by the existing user. When the existing user selects the accept button 460, the e-mail address of the new user is added to the address book of the existing user. The notification interface 450 also includes a reject button 465 that, when selected, dismisses the notification interface 450 without first adding the e-mail address of the new user to the address book of the existing user.

Referring to FIG. 5A, an exemplary address book 500 may be displayed to a user of an e-mail program. The address book 500 includes a list box 505 that includes a list of the user's contacts. Three contacts, Larry Jones, Bob Davis, and Jane Doe, are shown in the list box 505. When a contact in list box 505 is selected, the contact's information is shown in a box 510. The information includes, for example, the contact's name and the contact's e-mail address. FIG. 5A illustrates the address book 500 before a notification of an e-mail address of a new user, such as the notification interface 450 of FIG. 4B, is displayed for the user.

Referring also to FIG. 5B, the address book 500 also may be displayed to the user after such a notification is displayed. For example, the user, upon being presented with the notification interface 450 of FIG. 4B, may select the accept button 460 to import the e-mail address of the new user into the address book 500, and then may access the address book 500. When the address book 500 is subsequently accessed, the new user appears in the list box 505 as an additional contact 515 named John Smith, as was indicated in the notification interface 450. Selection of the contact 515 displays contact information for the contact 515 in the box 510. For example, the e-mail address 520, "JohnSmith@domain.com," which was indicated on the notification interface 450, is associated with the contact 515 that was added to the address book 500 as a result of the selection of the accept button 460. The contact 515 may be selected from the address book 500 to address messages to the new user. In addition, the new user may have added the user of the address book 500 to an address book used by the new user such that the new user may select the user from the address book to address e-mail messages to the user.

Referring to FIG. 6, a process 600 is used to organize a participant list of users of an electronic communications system that is used by a user of the electronic communications system. The users included in the participant list are organized based on communications strengths of the users with the user that uses the participant list. The users may be organized in place in the participant list, or in a special group within the participant list. The special group may only include the users that correspond to the highest communications strengths. In addition, the users that correspond to the lowest communications strengths may be removed from the participant list, because communication with those users is unlikely. The process 600 may be executed when the user first becomes a user of the electronic communications system, periodically on a recurring basis, or after an indication to execute the process 600 is received from the user.

Initially, the participant list used by the user is maintained (605). The user may use the participant list to communicate with the other users included in the participant list. The participant list includes one or more identifiers of the other users, and the user may select an identifier from the participant list to address a message to be sent to the corresponding user with the electronic communications system. The identifiers included in the participant list may be separated into one or more groups that categorize or otherwise organize the other users. The location of the identifier within the participant

list may affect how quickly and easily the user may find and select the identifier and send the message.

Communications strengths are determined for each of the users included in the participant list (610). The communications strengths may be calculated from one or more characteristics of the relationship between the new user and each of the known users, as described above.

An additional group within the participant list may be provided (615). Copies of the identifiers of some or all of the users included in the participant list may be organized within the additional group. In one implementation, the additional group is added to the end of the participant list below other existing groups within the participant list.

Organizing copies of the identifiers within the additional group does not disrupt the organization of other copies of the identifiers included in other existing groups of the participant list. Therefore, the user may access the unorganized identifiers, with which the user may be more familiar, or the organized identifiers in the additional group when accessing identifiers to address messages to the corresponding users of the electronic communications system.

The users included in the participant list may be organized based on communications strength in the additional group (620). In one implementation, second copies of identifiers of users with higher communications strengths are placed above identifiers of users with lower communications strengths in the additional group. All users included in the participant list are organized within the additional group, so the participant list includes two copies of an identifier of each of the users included in the participant list. Copies of the identifiers in the other existing groups are not organized by communications strength.

Alternatively, only some of the users included in the participant list may be organized based on communications strength in the additional group. For example, the users with the highest communications strengths may be organized in the additional group (625). Identifiers of users with higher communications strengths may be placed above identifiers of users with lower communications strengths in the additional group. In one implementation, identifiers of a particular number of the users with the highest communications strengths are organized within the participant list. In another implementation, identifiers of the users with communications strengths above a threshold value are organized within the additional group. Only some of the users of the participant list are organized within the additional group, so the participant list includes two copies of

an identifier of some of the users included in the participant list. Copies of the identifiers in the other existing groups remain unorganized.

When the additional group is not provided within the participant list, the users included in the participant list are organized in place based on corresponding communications strengths (630). Doing so may change the order in which the identifiers of the included users appear in the participant list. Identifiers of users with higher communications strengths may be placed above identifiers of users with lower communications strengths within each group of the participant list. In such implementations, the participant list includes a single copy of each different identifier, and no identifiers are moved or copied between groups.

Identifiers of the users included in the participant list corresponding to the lowest communications strengths may be removed from the participant list (635). For example, identifiers of the users corresponding to communications strengths that are below a threshold value may be removed from the participant list. A low communications strength for a particular user is indicative of a weak relationship between the particular user and the user. As such, the user most likely does not communicate with the particular user very often, and the user most likely does not access an identifier of the particular user included in the participant list to address a message to the particular user very often. Therefore, the identifier of the particular user, and other users included in the participant list corresponding to the lowest communications strengths, may be removed from the participant list. As an alternative to removal, these users may be moved to a special group designated as being for users with lower communications strengths.

In some implementations, the user of the electronic communications system whose participant list is maintained with the process 600 may use multiple identifiers when communicating over the electronic communications system. The multiple identifiers may be linked such that the user may communicate using more than one of the multiple identities at a time. Furthermore, the user may maintain a participant list for each of the multiple identities, and the participant list for a particular identifier may include other users with whom the user communicates using the particular identifier. The participant lists for each of the multiple identities may be conglomerated into a single participant list that is maintained with the process 600.

When organizing the participant list of the user with the process 600, the multiple participant lists corresponding to the user may be organized individually. In addition, an additional participant list may be added to the single participant list for the user. The

additional participant list may include one or more users from one or more of the multiple participant lists for the user in an organized manner, in a manner similar to how users of the participant list were organized within an additional group within the participant list (620, 625).

5 Referring to FIGS. 7A-7C, a buddy list interface 200 for a given user displays in an organized manner the screen names of other selected users of an instant messaging system with which the given user regularly exchanges instant messages. More particularly, the buddy list interfaces 200 illustrated in FIGS. 7A-7C display organized listings of the screen names displayed in the buddy list interface 200 of FIG. 2A. The  
10 buddy list interfaces 200 illustrated in FIGS. 7A-7C are presented to the given user after various implementations of the process 600 of FIG. 6 are executed for the given user.

The buddy list interface 200 in FIG. 7A is presented to the given user after the execution of an implementation of the process 600 in which the displayed screen names are organized in place within the buddy groups with which the displayed screen names  
15 are associated. The displayed screen names are organized within the buddy list based on communications strength between the corresponding other users and the given user, with screen names corresponding to higher communications strengths appearing within the buddy groups above screen names corresponding to lower communications strengths. In addition, screen names corresponding to exceedingly low communications strengths may  
20 be removed from the buddy list.

For example, in the buddy list interface 200 from FIG. 2A, the screen name 210a is listed above the screen name 210b in the buddy group 215a. However, in the buddy list interface 200 of FIG. 7A, the screen name 210b is listed above the screen name 210a in the buddy group 215a because the user corresponding to the screen name 215b has a  
25 higher communications strength with the given user than the user corresponding to the screen name 210a. The screen names 210a and 210b are still associated with the buddy group 215a.

Similarly, the screen names 215c, 215d, and 215e are presented within the buddy group 215b in that order in the buddy list 200 of FIG. 2B. However, in the buddy list  
30 interface 200 of FIG. 7A, the screen name 210e is listed above the screen name 210c in the buddy group 215b, and the screen name 210d is no longer associated with the buddy group 215b. Such a display of the screen names 210c-210e indicates that the user corresponding to the screen name 210e has the highest communications strength with the given user among the users corresponding to the screen names 210c-210e. The user



corresponding to the screen name 210d has a communications strength with the given user that warrants removing the screen name from the buddy list, and the user corresponding to the screen name 210c has a communications strength between the communications strengths corresponding to the screen names 210d and 210e.

5 Organizing the screen names 210a-210e within the groups with which the screen names 210a-210e are associated indicates the relative communications strengths of the users corresponding to a particular group. However, the relative communications strengths of users whose screen names are associated with different buddy groups are not easily seen with such an organization. Organizing the screen names 210a-210e without  
10 reference to a particular buddy group indicates the relative communications strengths of users whose screen names are associated with different buddy groups.

The buddy list interfaces 200 in FIGS. 7B and 7C are presented to the given user after the execution of implementations of the process 600 in which the displayed screen names are organized within a special group in the buddy list based on communications  
15 strength. More particularly, all of the screen names displayed in the buddy list interface 200 of FIG. 2A are organized within the special group displayed in the buddy list interface 200 of FIG. 7B, and the screen names corresponding to the highest communications strengths are organized within the special group displayed in the buddy list interface 200 of FIG. 7C. Screen names corresponding to higher communications  
20 strengths are displayed within the special group above screen names corresponding to lower communications strengths.

The buddy list interfaces 200 of FIGS. 7B and 7C include a special buddy group 215e, "Organized," that includes some or all of the screen names 210a-210e. The header of the special buddy group 215e indicates that all of the users associated with the special  
25 buddy group 215e are present and available to exchange instant messages. In FIG. 7B, the screen name 210e is the first screen name listed in the special group 215e, the screen name 210b is the second, the screen name 210c is the third, the screen name 210a is the fourth, and the screen name 210d is the fifth. In FIG. 7C, only the screen names 210e, 210b, and 210c, are listed within the special group 215e in the same order as in FIG. 7B.  
30 The order of appearance of the screen names 210a-210e within the special buddy group 215e is indicative of the relative communications strengths of the users corresponding to the screen names 210a-210e. The screen names 210a-210e remain associated with the buddy groups 215a-215c such that some or all of the screen names 210a-210e are displayed in the buddy list interface 200 twice.

The special buddy group 215e may be placed above, below, or among the other existing buddy groups 215a-215c to facilitate viewing and selecting the organized screen names 210a-210e. In some implementations, the screen names 210a-210e may be selectable from the buddy list interfaces 200 of FIGS. 7A-7C to reveal the communications strengths of the users corresponding to the screen names 210a-210e. For example, selecting one of the screen names 210a-210e may cause a tool tip or some other pop-up window to be displayed with an indication of the communications strength of the user corresponding to the selected screen name. The indication of the communications strength may be a numerical value for the communications strength or a more qualitative description of the communications strength.

The described techniques for augmenting and organizing participant lists of identifiers used in sending and receiving electronic messages may be applied to any type of participant list associated with any type of electronic communications system. For example, a buddy list used with an instant messaging system, an e-mail address book used with an e-mail system, a list of users of a social network used with a social networking system, or any other list of contact information that includes information that may be used to contact other people, may be automatically augmented with contact information of known people. The same contact lists may be organized to facilitate accessing and selecting contact information that may be used to contact other people.

FIGS. 8-10 illustrate exemplary block diagrams of an electronic communications system that may be used as part of the implementation of the features described above.

For illustrative purposes, FIGS. 8-10 show an example of a communications system for implementing techniques for transferring electronic data, including instant messages and e-mail. For brevity, several elements in the figures described below are represented as monolithic entities. However, as would be understood by one skilled in the art, these elements each may include numerous interconnected computers and components designed to perform a set of specified operations and/or may be dedicated to a particular geographical region.

Referring to FIG. 8, a communications system 800 is capable of delivering and exchanging data between a user system 805 and a provider system 810 through a communications link 815. The user system 805 typically includes one or more user devices 820 and/or user controllers 825, and the provider system 810 typically includes one or more provider devices 835 and/or provider controllers 840. For example, the user system 805 or the provider system 810 may include one or more general-purpose

computers (e.g., personal computers), one or more special-purpose computers (e.g., devices specifically programmed to communicate with each other and/or the user system 805 or the provider system 810), or a combination of one or more general-purpose computers and one or more special-purpose computers. The user system 805 and the provider system 810 may be arranged to operate within or in concert with one or more other systems, such as, for example, one or more LANs ("Local Area Networks") and/or one or more WANs ("Wide Area Networks").

The user device 820 (or the provider device 835) is generally capable of executing instructions under the command of a user controller 825 (or a provider controller 840). The user device 820 (or the provider device 835) is connected to the user controller 825 (or the provider controller 840) by a wired or wireless data pathway 830 or 845 capable of delivering data.

Each of the user device 820, the user controller 825, the provider device 835, and the provider controller 840 typically includes one or more hardware components and/or software components. An example of a user device 820 or a provider device 835 is a general-purpose computer (e.g., a personal computer) capable of responding to and executing instructions in a defined manner. Other examples include a special-purpose computer, a workstation, a server, a device, a component, other physical or virtual equipment or some combination thereof capable of responding to and executing instructions. The user device 820 and the provider device 835 may include devices that are capable of peer-to-peer communications.

An example of a user controller 825 or a provider controller 840 is a software application loaded on the user device 820 or the provider device 835 for commanding and directing communications enabled by the user device 820 or the provider device 835.

Other examples include a program, a piece of code, an instruction, a device, a computer, a computer system, or a combination thereof, for independently or collectively instructing the user device 820 or the provider device 835 to interact and operate as described. The user controller 825 and the provider controller 840 may be embodied permanently or temporarily in any type of machine, component, physical or virtual equipment, storage medium, or propagated signal capable of providing instructions to the user device 820 or the provider device 835.

The communications link 815 typically includes a delivery network 860 making a direct or indirect communication between the user system 805 and the provider system 810, irrespective of physical separation. Examples of a delivery network 860 include the

Internet, the World Wide Web, WANs, LANs, analog or digital wired and wireless telephone networks (e.g. PSTN, ISDN, and xDSL), radio, television, cable, satellite, and/or any other delivery mechanism for carrying data. The communications link 815 may include communication pathways 850 and 855 that enable communications through the one or more delivery networks 860 described above. Each of the communication pathways 850 and 855 may include, for example, a wired, wireless, cable or satellite communication pathway.

FIG. 9 illustrates a communications system 900 including a user system 905 communicating with a provider system 910 through a communications link 915. User system 905 typically includes one or more user devices 920 and one or more user controllers 925 for controlling the user devices 920. Provider system 910 typically includes one or more provider devices 935 and one or more provider controllers 940 for controlling the provider devices 935. The communications link 915 may include communication pathways 950 and 955 that enable communications through the one or more delivery networks 960.

Examples of each element within the communications system of FIG. 9 are broadly described above with respect to FIG. 8. In particular, the provider system 910 and communications link 915 typically have attributes comparable to those described with respect to the provider system 810 and the communications link 815 of FIG. 8. Likewise, the user system 905 of FIG. 9 typically has attributes comparable to and illustrates one possible implementation of the user system 805 of FIG. 8.

The user device 920 typically includes a general-purpose computer 970 having an internal or external storage 972 for storing data and programs such as an operating system 974 (e.g., DOS, Windows™, Windows 95™, Windows 98™, Windows 2000™, Windows Me™, Windows XP™, Windows NT™, OS/9, or Linux) and one or more application programs. Examples of application programs include authoring applications 976 (e.g., word processing programs, database programs, spreadsheet programs, or graphics programs) capable of generating documents or other electronic content; user applications 978 (e.g., AOL user, CompuServe user, AIM user, AOL TV user, or ISP user) capable of communicating with other computer users, accessing various computer resources, and viewing, creating, or otherwise manipulating electronic content; and browser applications 980 (e.g., Netscape's Navigator or Microsoft's Internet Explorer) capable of rendering standard Internet content and also capable of supporting a web-based e-mail user and a web-based instant messaging user.

The general-purpose computer 970 also includes a central processing unit 982 (CPU) for executing instructions in response to commands from the user controller 925. In one implementation, the user controller 925 includes one or more of the application programs installed on the internal or external storage 972 of the general-purpose computer 970. In another implementation, the user controller 925 includes application programs externally stored in and performed by one or more device(s) external to the general-purpose computer 970.

The general-purpose computer typically will include a communication device 984 for sending and receiving data. One example of the communication device 984 is a modem. Other examples include a transceiver, a set-top box, a communication card, a satellite dish, an antenna, or another network adapter capable of transmitting and receiving data over the communications link 915 through a wired or wireless data pathway 950. The general-purpose computer 970 also may include a TV tuner 986 for receiving television programming in the form of broadcast, satellite, and/or cable TV signals. As a result, the user device 920 can selectively and/or simultaneously display network content received by communications device 984 and television programming content received by the TV tuner 986.

The general-purpose computer 970 typically will include an input/output interface 988 for wired or wireless connection to various peripheral devices 990. Examples of peripheral devices 990 include, but are not limited to, a mouse 991, a mobile phone 992, a personal digital assistant 993 (PDA), an MP3 player (not shown), a keyboard 994, a display monitor 995 with or without a touch screen input, a TV remote control 996 for receiving information from and rendering information to subscribers, and an audiovisual input device 998.

Although FIG. 9 illustrates devices such as a mobile telephone 992, a PDA 993, and a TV remote control 996 as being peripheral with respect to the general-purpose computer 970, in another implementation, such devices may themselves include the functionality of the general-purpose computer 970 and operate as the user device 920. For example, the mobile phone 992 or the PDA 993 may include computing and networking capabilities and function as a user device 920 by accessing the delivery network 960 and communicating with the provider system 910. Furthermore, the user system 905 may include one, some or all of the components and devices described above.

Referring to FIG. 10, a communications system 1000 is capable of delivering and exchanging information between a user system 1005 and a provider system 1010 through

a communication link 1015. User system 1005 typically includes one or more user devices 1020 and one or more user controllers 1025 for controlling the user devices 1020. Provider system 1010 typically includes one or more provider devices 1035 and one or more provider controllers 1040 for controlling the provider devices 1035. The communications link 1015 may include communication pathways 1050 and 1055 that enable communications through the one or more delivery networks 1060.

Examples of each element within the communications system of FIG. 10 are broadly described above with respect to FIGS. 8 and 9. In particular, the user system 1005 and the communications link 1015 typically have attributes comparable to those described with respect to user systems 805 and 905 and communications links 815 and 915 of FIGS. 8 and 9. Likewise, the provider system 1010 of FIG. 10 may have attributes comparable to and illustrates one possible implementation of the provider systems 810 and 910 shown in FIGS. 8 and 9.

The provider system 1010 includes a provider device 1035 and a provider controller 1040. The provider controller 1040 is generally capable of transmitting instructions to any or all of the elements of the provider device 1035. For example, in one implementation, the provider controller 1040 includes one or more software applications loaded on the provider device 1035. In other implementations, as described above, the provider controller 1040 may include any of several other programs, machines, and devices operating independently or collectively to control the provider device.

The provider device 1035 includes a login server 1070 for enabling access by subscribers and for routing communications between the user system 1005 and other elements of the provider device 1035. The provider device 1035 also includes various provider complexes such as the depicted OSP ("Online Service Provider") provider complex 1080 and IM ("Instant Messaging") provider complex 1090. To enable access to these provider complexes by subscribers, the user system 1005 includes communication software, for example, an OSP user application and an IM user application. The OSP and IM communication software applications are designed to facilitate the subscriber's interactions with the respective services and, in particular, may provide access to all the services available within the respective provider complexes.

Typically, the OSP provider complex 1080 supports different services, such as e-mail, discussion groups, chat, news services, and Internet access. The OSP provider complex 1080 is generally designed with an architecture that enables the machines within the OSP provider complex 1080 to communicate with each other and employs certain

protocols (i.e., standards, formats, conventions, rules, and structures) to transfer data. The OSP provider complex 1080 ordinarily employs one or more OSP protocols and custom dialing engines to enable access by selected user applications. The OSP provider complex 1080 may define one or more specific protocols for each service based on a common, underlying proprietary protocol.

The IM provider complex 1090 is generally independent of the OSP provider complex 1080, and supports instant messaging services irrespective of a subscriber's network or Internet access. Thus, the IM provider complex 1090 allows subscribers to send and receive instant messages, whether or not they have access to any particular ISP. The IM provider complex 1090 may support associated services, such as administrative matters, advertising, directory services, chat, and interest groups related to instant messaging. The IM provider complex 1090 has an architecture that enables all of the machines within the IM provider complex to communicate with each other. To transfer data, the IM provider complex 1090 employs one or more standard or exclusive IM protocols.

The provider device 1035 may include one or more gateways that connect and therefore link complexes, such as the OSP provider complex gateway 1085 and the IM provider complex gateway 1095. The OSP provider complex gateway 1085 and the IM provider complex gateway 1095 may directly or indirectly link the OSP provider complex 1080 with the IM provider complex 1090 through a wired or wireless pathway.

Ordinarily, when used to facilitate a link between complexes, the OSP provider complex gateway 1085 and the IM provider complex gateway 1095 are privy to information regarding the protocol type anticipated by a destination complex, which enables any necessary protocol conversion to be performed incident to the transfer of data from one complex to another. For instance, the OSP provider complex 1080 and IM provider complex 1090 generally use different protocols such that transferring data between the complexes requires protocol conversion by or at the request of the OSP provider complex gateway 1085 and/or the IM provider complex gateway 1095.

Referring to FIG. 11, a process 1100 is used to categorize contacts in a contact list. For example, the process 1100 may be used to categorize contacts of a participant list of an instant messaging system, or a list of users of the instant messaging system for which presence information is monitored. Attributes of users included in the participant list are identified, and categories into which the participants should be categorized are identified based on the identified attributes. If one or more of the categories are not

already included in the participant list, those categories may be newly included in the list (i.e., added).

Initially, the participant list used by a first user of an electronic communications system is maintained (1105). The first user may use the participant list to communicate with the other users included in the participant list. The participant list includes one or more identifiers of the other users, and the first user may select an identifier from the participant list as an address for purposes of sending a message to the corresponding user with the electronic communications system. The identifiers included in the participant list may be separated into one or more categories that categorize or otherwise organize the other users. The location of the identifier within the participant list may affect how quickly and easily the first user may find and select the identifier and send the message.

An identifier is selected from the participant list, or an indication of an unlisted identifier to be added to the participant list may be received from the first user (1110). The identifier may be selected from the participant list in response to a request from the first user to categorize the identifier. An attribute of the selected identifier and/or its corresponding user is accessed (1115). The attribute may be a characteristic of the identifier or its corresponding user, or a use-based metric that measures, for example, recent activity of the identifier or its corresponding user. For example, the attribute may be a location of the user, an age of the user, an occupation of the user, an interest of the user, an activity of the user, or another attribute that describes the user. Alternatively or additionally, the attribute may describe the communications exchanged between the first user and the identifier or its corresponding user. For example, the attribute may indicate a frequency with which the first user exchanges messages with the user via instant messaging or otherwise, a number of instant messages that are exchanged between the first user and the selected identifier or its corresponding user, a length of messages exchanged between the first user and the selected identifier or its corresponding user, and a time at which the first user has most-recently or otherwise exchanged messages with the selected identifier or its corresponding user. For example, the attribute may indicate whether the messages have been received from the selected identifier or its corresponding user today, yesterday, in the past week, or in the past month. As another example, the attribute may indicate whether the messages have been received from the selected identifier or its corresponding user with a frequency of at least one a day, at least one a week, at least one a month. As yet another example, the attribute may indicate whether the messages have been received



from the selected identifier or its corresponding user are at least a threshold length, or are at most a threshold length.

The attribute describing the communications exchanged between the first user and the selected identifier or its corresponding user may consider communications sent using one or more communications systems. For example, a frequency, number, length, or time of instant messages sent between the first user and the selected identifier or its corresponding user may be used to determine the attribute. As another example, instant messages and e-mail messages may be used to determine the attribute. As yet another example, instant messages, e-mail messages, and voice over Internet protocol (VoIP) telephone calls may be used to determine the attribute.

Alternatively or additionally, the attribute may be identified by accessing a second list of entities for which contact information is maintained, such as an address book of an e-mail system. The attribute of the identifier may be identified as a category within the second list that includes the identifier or the user corresponding to the identifier, or information sources available for either (i.e. Internet search). The attribute may be identified from a profile associated with the identifier, such as a profile of a user corresponding to the identifier. Alternatively or additionally, information describing the messages exchanged between the first user and the identifier or its corresponding user, such as a log of those messages, may be examined to identify the attribute.

Attributes stored relative to at least one category included in the participant list are accessed (1120). The attributes associated with the identifier are compared to the stored attributes of the categories (1125). If the identifier is associated with an attribute that has been stored for a particular category, then the identifier corresponds to the category, and the identifier should be included in the category.

A category within the participant list that corresponds to the identifier may be identified, based on the comparison (1130). More particularly, a category associated with the identified attribute is identified from the participant list. For example, if the identifier or its corresponding user is determined to have a particular occupation, then a category associated with the particular occupation may be identified. As another example, if the user corresponding to the identifier has a common last name with first user, then a category associated with family members of the first user may be identified. As yet another example, a category associated with a particular address or location may be identified when the user corresponding to the identifier lives at, or is otherwise associated

with, the particular address or location. The category may be a category with which the identifier is not currently associated.

If such a category does not exist, then the category may be added to the participant list (1135). Adding the category may include making perceivable a pre-existing category that was previously hidden while unpopulated. Adding the category also may include supplementing the participant list with a category that was not previously included in the list. In one implementation, the category is added to the end of the participant list below other existing categories within the participant list. The identified or added category may be a sub-category of another category within the participant list. The sub-category may be identified or added by first identifying the super-category that includes the sub-category, and then identifying or adding the sub-category within the super-category.

The first user is prompted to accept categorization of the identifier into the identified category (1140). If the first user accepts the categorization, then the identifier is categorized into the identified or added category (1145). If the user does not accept the categorization, then another attempt to categorize the identifier into a different category may be made by executing the process 1100 again. Alternatively or additionally, the first user may be enabled to manually categorize the identifier. In other words, the first user may be enabled to override the suggested categorization.

The process 1100 may be repeated to categorize all or other identifiers included in the participant list. In other words, attributes of each of the identifiers included in the participant list may be identified (1115), and the attributes may be compared to attributes of categories included in the participant list (1120, 1125) to identify one or more categories (1130, 1135) into which each of the identifiers should be categorized (1145).

In some implementations, multiple attributes may be identified for the identifier, and the multiple attributes may be used to identify multiple categories of the participant list to which the identifier corresponds. In addition, a single attribute may indicate multiple categories of the participant list to which the identifier corresponds. As a result, the identifier may appear in the participant list multiple times, which may facilitate selecting the user from the participant list. More particularly, the identifier appearing in the participant list increases the chances of the first user being able to identify the identifier from the participant list.

Alternatively, some categories may be mutually exclusive of each other, or they may be populated as such to reduce screen clutter. For example, an identifier with whom communications are exchanged yesterday would be categorized in each of the

“Yesterday” and “This Week” categories, by definition. However, to reduce screen clutter, it may be listed only in the “Yesterday” category until no longer appropriately categorized as such, or its appearance in each may be changed to reflect multiple categorizations.

5 Referring to FIGS. 12A and 12B, a buddy list interface 200 for a given user (i.e., a first user) displays a buddy list that includes screen names of other selected users of an instant messaging system with which the given user regularly exchanges instant messages. More particularly, the buddy list in the buddy list interface 200 includes multiple screen names 1210a-1210c. For example, the buddy list includes the screen  
10 name “Friend1” 1210a, the screen name “Friend2” 1210b, and the screen name “Mom” 1210c.

The screen names 1210a-1210c are organized into multiple buddy groups 1215a-1215e. The buddy list includes a “Today” buddy group 1215a, a “Yesterday” buddy group 1215b, a “This Week” buddy group 1215c, a “My Town” buddy group 1215d, and  
15 a “Long Messages” buddy group 1215e. The buddy groups 1210a-1210c include screen names of users with which the given user has exchanged messages on a current day, a day before the current day, or a week that includes the current day, respectively. The buddy group 1210d include screen names of people that live in a town of the given user, and the buddy group 1210e includes screen names of people that exchange long messages with  
20 the given user.

The buddy list interface 200 of FIG. 12A is presented to the given user before the process 1100 of FIG. 11 has been executed. The categorization of the screen names 1210a-1210c displayed in the buddy list interface 200 of FIG. 12A may be the result of a previous execution of the process 1100. The buddy list interface 200 of FIG. 12B may be  
25 presented to the given user after the process 1100 has been executed. In one implementation, the buddy list interface 200 of FIG. 12A may be presented to the given user on a first day, and the buddy list interface 200 of FIG. 12B may be presented to the given user on a second day that is the day after the first day.

On the first day, the users corresponding to screen names 1210a and 1210b (i.e.,  
30 Friend1 and Friend2, respectively) had the attributes of communicating with the given user on that day, which is in the current week, and of living in the same town as the given user. Therefore, the screen names 1210a and 1210b are included in the groups 1215a, 1215c, and 1215d of the buddy list interface 200 of FIG. 12A. Similarly, the user corresponding to the screen name 1210c (i.e., Mom) communicated with the given user

on the day before the first day, which is still in the current week, as evidenced by the inclusion of the screen name 1210c in the groups 1205b and 1205c.

As reflected by FIG. 12B, however, the attributes of the users corresponding to the screen names 1210a-1210c may change between the first and second days, and execution of the process 1100 between the first and second days causes those changes to be reflected in the buddy list interface 200 of FIG. 12B. For example, for ease of consideration, assume no further communications between the users. As day 1 (FIG. 12A) changes to day 2 (FIG. 12B), the timing of recent communications between the users changes such that the screen names 1210a and 1210b are now included in the group 1215b, and the screen name 1210c is now included in the group 1215c. In addition, the screen name 1210b has been removed from the group 1215d and is included in the new group 1215e if, for example, because the user corresponding to the screen name 1210b moved out of the town of the given user and sent a long message to the given user to say goodbye to the given user.

Referring to FIG. 13, a notification interface 1300 notifies a user of an electronic communications system of a suggested category within a participant list of the user to which a new identifier should be added. The notification interface 1300 also enables the user to accept the suggested category for the new identifier, to request a new category for the new identifier, or to reject the suggested category. A similar notification interface 1300 may be presented to the user when identifiers already included in the participant list are categorized.

The notification interface 1300 includes a message 1305 that informs the user of the suggested category for the new identifier, as well as a reason for suggesting the suggested category. For example, the message 1305 informs the user that the identifier "SN1" will be added to a "Co-worker" buddy group, because a user corresponding to the identifier works at the same corporation as the user of the participant list.

The notification interface 1305 also includes an accept button 1310 that enables the user to accept the addition of the new identifier to the suggested category. When the existing user selects the accept button 1310, the new identifier is added to the suggested category. As indicated in the message 1305, the button 1310 may be selected automatically when not selected by the user within a particular amount of time, such as 10 seconds.

The notification interface 1300 also includes reclassify button 1315 that results in the suggestion of another category for the new identifier. When the reclassify button

1315 is selected, a new notification interface 1300 with a new suggested category may be displayed. In addition, the notification interface 1300 on which the reclassify button 1315 was selected may be dismissed.

The notification interface 1300 also includes a cancel button 1320 that, when selected, dismisses the notification interface 1300 without first adding the new identifier to the suggested category. In some implementations, the new identifier still may be added, for example, to a general category within the participant list when the cancel button 1320 is selected. The user may be enabled to manually categorize the new identifier when the cancel button 1320 is selected.

The described techniques result in the population and organization of participant lists for electronic communications systems. Presence and location of a user in a participant list is indicative of the communications strength of the user with another user that uses the participant list. As a result, participant lists populated and organized with the described techniques may inform the population and organization of other participant lists. For example, when a buddy list of an instant messaging system is organized with the process 600 of FIG. 6, the organization of contacts within the buddy list may be used to organize the same contacts in an address book for an e-mail system. The e-mail system may receive the participant list from the instant messaging system as a result of subscribing to participant lists published by the instant messaging system. Furthermore, applications and systems related or unrelated to a participant list that has been populated or organized with the described techniques may use the participant list. For example, an application may need to communicate with a person well known to a user whose participant list was populated with the process 100 of FIG. 1. The application may identify such a person from the participant list because people with high communications strengths with the user have been added to the user's participant list.

In another example, when a buddy list of an instant messaging system is populated using the process 100 of FIG. 1 and/or organized using the process 600 of FIG. 6, the populated and/or organized buddy list may be accessed by and/or exported to other instant messaging systems or other systems that provide a user interface for an instant messaging system. Thus, a buddy list that is populated and/or organized in one instant messaging system may be accessed, used, and/or exported for use by a different instant messaging system.

The described techniques may be applied when a user first becomes a user of an electronic communications system, at which point the user receives a new personal

identifier and a corresponding participant list for use with the electronic communications system. The described techniques also may be applied when the user changes their identifier, or when the user chooses an additional identifier. For example, people known to the user may be notified of the changed or additional identifier such that those people  
5 may add the changed or additional identifier to their personal participant lists. People known to the user may be added to participant lists corresponding to the changed or additional identifier, and the participant lists corresponding to the changed or additional identifier may be organized. Population and organization of the participant lists for the changed or additional identifier may occur separately for each of those participant lists, or  
10 together for all of the participant lists corresponding to the user, as described above.

A participant list of a user of an electronic communications system may be dynamically maintained by calculating communications strengths between the user and people known to the user multiple times on a periodic or aperiodic basis. As messages are sent and received by the user, and as the relationships between the users and the  
15 known people change, the communications strengths between the user and the known people may change, and the communications strengths may be calculated multiple times to account for that change. For example, the communications strength between the user and one of the known people may be calculated each time a message is sent to or from that known person. The population and organization of the participant list of the user  
20 may be updated according to the process 100 of FIG. 1 and the process 600 of FIG. 6, based on the latest calculations of the communications strengths that have been received. In addition, people known to the user may be enabled to add an identifier of the user to a personal participant list according to the process 300 of FIG. 3, based on the latest calculations of the communications strengths that have been received.

25 The described systems, methods, and techniques may be implemented in digital electronic circuitry, computer hardware, firmware, software, or in combinations of these elements. Apparatus embodying these techniques may include appropriate input and output devices, a computer processor, and a computer program product tangibly embodied in a machine-readable storage device for execution by a programmable  
30 processor. A process embodying these techniques may be performed by a programmable processor executing a program of instructions to perform desired functions by operating on input data and generating appropriate output. The techniques may be implemented in one or more computer programs that are executable on a programmable system including at least one programmable processor coupled to receive data and instructions from, and to

transmit data and instructions to, a data storage system, at least one input device, and at least one output device. Each computer program may be implemented in a high-level procedural or object-oriented programming language, or in assembly or machine language if desired; and in any case, the language may be a compiled or interpreted language. Suitable processors include, by way of example, both general and special purpose microprocessors. Generally, a processor will receive instructions and data from a read-only memory and/or a random access memory. Storage devices suitable for tangibly embodying computer program instructions and data include all forms of non-volatile memory, including by way of example semiconductor memory devices, such as Erasable Programmable Read-Only Memory (EPROM), Electrically Erasable Programmable Read-Only Memory (EEPROM), and flash memory devices; magnetic disks such as internal hard disks and removable disks; magneto-optical disks; and Compact Disc Read-Only Memory (CD-ROM). Any of the foregoing may be supplemented by, or incorporated in, specially-designed ASICs (application-specific integrated circuits).

It will be understood that various modifications may be made without departing from the spirit and scope of the claims. For example, advantageous results still could be achieved if steps of the disclosed techniques were performed in a different order and/or if components in the disclosed systems were combined in a different manner and/or replaced or supplemented by other components. Accordingly, other implementations are within the scope of the following claims.

**WHAT IS CLAIMED IS:**

1. A method of passively populating a list of participants of an electronic communications system, the method comprising:
  - maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system;
  - identifying existing users of the electronic communications system that are known to the user;
  - determining a communications strength between the user and each of the identified existing users; and
  - designating the identified existing users with the highest communications strengths for addition to the participant list.
2. The method of claim 1 further comprising adding the designated users with the highest communications strengths to the participant list.
3. The method of claim 2 further comprising identifying a group within the participant list to which each of the designated users should be added.
4. The method of claim 3 wherein identifying the group within the participant list comprises creating the group within the participant list.
5. The method of claim 3 wherein adding the designated users to the participant list comprises adding each of the designated users to the corresponding identified group within the participant list.
6. The method of claim 3 wherein the participant list is a buddy list of an instant messaging system, and the group within the participant list is a category within the buddy list.
7. The method of claim 3 wherein the participant list is an address book of an e-mail system, and the group within the participant list is a category within the address book.
8. The method of claim 3 wherein identifying a group within the participant list to which a designated user is to be added comprises identifying a group within the participant list that includes users of the electronic communications system that share a characteristic with the designated user.
9. The method of claim 3 wherein identifying a group within the participant list to which a designated user is to be added comprises:



identifying a group within a second participant list that includes the designated user; and

identifying a group within the participant list that corresponds to the group within the second participant list as the group within the participant list to which the designated users should be added.

10. The method of claim 9 wherein:

the participant list is a buddy list of an instant messaging system;  
the group within the participant list is a category within the buddy list;  
the second participant list is an address book of an e-mail system; and  
the group within the second participant list is a category within the address book.

11. The method of claim 9 wherein:

the participant list is an address book of an e-mail system;  
the group within the participant list is a category within the address book;  
the second participant list is a buddy list of an instant messaging system; and  
the group within the second participant list is a category within the buddy list.

12. The method of claim 3 wherein identifying a group within the participant list to which a designated user is to be added comprises identifying a group within the participant list that includes users of the electronic communications system that are associated with the designated user.

13. The method of claim 2 further comprising determining a number of users that may be added to the participant list.

14. The method of claim 13 wherein adding the designated users to the participant list comprises adding a number of the designated users equal to the determined number of users to be added to the participant list.

15. The method of claim 1 further comprising sorting the identified existing users based on the corresponding communications strengths prior to designating the identified existing users with the highest communications strengths for addition to the participant list.

16. The method of claim 15 wherein sorting the identified existing users comprises ordering the identified existing users with higher communications strengths before the identified existing users with lower communications strengths.

17. The method of claim 1 wherein identifying the existing users that are known to the user comprises identifying existing users known to the user that are not included in the participant list.

18. The method of claim 1 wherein identifying the existing users that are known to the user comprises identifying existing users of the electronic communications system that are included in a contact list maintained by the user as being known by the user.

19. The method of claim 1 wherein identifying the existing users that are known to the user comprises identifying people known to the user that are associated with an identifier used in the electronic communications system as being known to the user.

20. The method of claim 1 wherein:  
determining a communications strength between the user and each of the identified existing users comprises determining degrees of separation between each of the identified existing users and the user; and  
designating the identified existing users with the highest communications strengths comprises designating the identified existing users with the smallest numbers of degrees of separation from the user.

21. The method of claim 1 wherein:  
determining a communications strength between the user and each of the identified existing users comprises determining whether each of the identified existing users includes the user in a contact list maintained by the existing user and is included in a contact list maintained by the user; and  
designating the identified existing users with the highest communications strengths comprises designating the identified existing users that include the user in contact lists maintained by the identified existing users and that are included in a contact list maintained by the user before designating the identified existing users that do not include the user in contact lists maintained by the identified existing users or that are not included in a contact list maintained by the user.

22. The method of claim 1 wherein:  
determining a communications strength between the user and each of the identified existing users comprises determining a number of messages sent between the user and each of the identified existing users; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users with the highest numbers of messages exchanged with the user.

23. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining a frequency with which messages between the user and each of the identified existing users are exchanged; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that exchange messages with the user with the highest frequencies.

24. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining whether each of the identified existing users is a direct or indirect addressee of messages from the user; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that are direct addressees before designating the identified existing users that are indirect addressees.

25. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining whether the user subscribes to contact information for each of the identified existing users and whether each of the identified existing users subscribes to contact information of the user; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that are both subscribers to the user's contact information and publishers of contact information that is subscribed to by the user before designating the identified existing users that are not both subscribers to the user's contact information and publishers of contact information that is subscribed to by the user.

26. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining a frequency with which messages are exchanged in a chat room between the user and each of the identified existing users; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that exchange messages in the chat room with the user with the highest frequencies.

27. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining amounts of time for which the user and each of the identified existing users have exchanged messages; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that have exchanged messages with the user for the longest amounts of time.

28. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining amounts of contact information for the user held by each of the identified existing users and amounts of contact information for each of the identified existing users held by the user; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users for which the user holds the largest amounts of contact information and that hold the largest amounts of contact information for the user.

29. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining whether each of the identified existing users both sends messages to the user and receives messages from the user; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users that both send messages to the user and receive messages from the user.

30. The method of claim 1 wherein:

determining a communications strength between the user and each of the identified existing users comprises determining a communications strength between each of the identified existing users and a different user; and

designating the identified existing users with the highest communications strengths comprises designating the identified existing users with the highest communications strengths with the different user.

31. The method of claim 1 wherein the electronic communications system is an instant messaging system.

32. The method of claim 1 wherein the electronic communications system is a chat system.

33. The method of claim 1 wherein the electronic communications system is an e-mail system.

34. The method of claim 1 wherein the participant list is a social network of the user.

35. A machine-accessible medium that when accessed, results in a machine performing operations for passively populating a list of participants of an electronic communications system, comprising:

maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system;

identifying existing users of the electronic communications system that are known to the user;

determining a communications strength between the user and each of the identified existing users; and

designating the identified existing users with the highest communications strengths for addition to the participant list.

36. A system for passively populating a list of participants of an electronic communications system, the system comprising:

means for maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system;

means for identifying existing users of the electronic communications system that are known to the user;

means for determining a communications strength between the user and each of the identified existing users; and

means for designating the identified existing users with the highest communications strengths for addition to the participant list.

37. A computer program stored on a computer-readable medium or a propagated signal that, when executed, generates a graphical user interface on a display device for using a computer to manage a list of users of an electronic communications system with which electronic messages may be exchanged, the graphical user interface comprising:

a participant list display associated with a user of the participant list display that includes users of an electronic communications system, one or more of the users being included automatically in the participant list display as a result of being identified as being known to the user and having high communications strengths with the user.

38. The computer program of claim 37 wherein:

the participant list display includes groups that are associated with one or more of the users included in the participant list display; and

a group included in the participant list display is associated with the one or more automatically included users.

39. The computer program of claim 37 wherein the participant list display is a display of a buddy list associated with an instant messaging system.

40. The computer program of claim 37 wherein the participant list display is a display of an address book associated with an e-mail system.

41. A method of passively populating a list of participants of an electronic communications system, the method comprising:

maintaining a participant list of users of an electronic communications system to be used by a user of the electronic communications system;

identifying a communications strength between the user and an existing user of the electronic communications system that is known to the user; and

using the identified communications strengths as a basis for discerning whether the existing user is a candidate for addition to the participant list.

42. The method of claim 41 wherein the electronic communications system is an instant messaging system.

43. The method of claim 41 wherein the electronic communications system is a chat system.

44. The method of claim 41 wherein the electronic communications system is an e-mail system.

45. The method of claim 41 wherein the participant list is a buddy list of an instant messaging system.

46. The method of claim 41 wherein the participant list is an address book of an e-mail system.

47. The method of claim 41 wherein the participant list is a social network of the user.

48. A method for organizing a participant list, the method comprising:

maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system;

determining communications strengths between the first user and each of the users included in the participant list; and

organizing the users included in the participant list based on the corresponding communications strengths.

49. The method of claim 48 wherein:

communications strengths are determined for users included in a group within the participant list; and

the users within the group are organized within the group based on communications strength.

50. The method of claim 48 further comprising providing an additional group in the participant list in which the users included in the participant list are organized based on communications strength.

51. The method of claim 48 further comprising providing an additional group in the participant list that includes the users included in the participant list with the highest communications strengths.

52. The method of claim 48 wherein organizing the users based on the corresponding communications strengths comprises ordering the users with higher communications strengths before the users with lower communications strengths.

53. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining a degree of separation between the first user and each of the users included in the participant list user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined degrees of separation.

54. The method of claim 53 wherein organizing the users based on the determined degrees of separation comprises sorting the users in order of increasing number of degrees of separation from the first user.

55. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining whether the users included in the participant list include the first user in contact lists maintained by the users and are included in a contact list maintained by the first user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determinations of whether the users include the first user in contact lists maintained by the users and are included in a contact list maintained by the first user.

56. The method of claim 55 wherein organizing the users based on the determinations of whether the users includes the first user in contact lists maintained by the users and are included in a contact list maintained by the first user comprises ordering the users that include the first user in contact lists maintained by the users and that are included in a contact list maintained by the first user before the users that do not include the first user in contact lists maintained by the users and that are not included in a contact list maintained by the first user.

57. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining a number of messages sent between the first user and each of the users included in the participant list; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined numbers of messages.

58. The method of claim 57 wherein organizing the users based on the determined numbers of messages comprises sorting the users in order of decreasing number of messages exchanged with the first user.

59. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining a frequency with which messages between the first user and each of the users included in the participant list are exchanged; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined frequencies.

60. The method of claim 59 wherein organizing the users based on the determined frequencies comprises organizing the users in order of decreasing frequency with which messages are exchanged with the first user.

61. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining whether each of the users included in the participant list is a direct or indirect addressee of a message from the first user; and



organizing the users based on the corresponding communications strengths comprises organizing the users based on the determinations of whether each of the users is a direct or indirect addressee of a message from the first user.

62. The method of claim 61 wherein organizing the users based on the determinations of whether each of the users included in the participant list is a direct or indirect addressee of a message from the first user comprises ordering the users that are direct addressees before the users that are indirect addressees.

63. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining whether each of the users included in the participant list is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determinations of whether each of the users is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user.

64. The method of claim 63 wherein organizing the users based on the determinations of whether each of the users is a publisher of contact information subscribed to by the first user and a subscriber to contact information published by the first user comprises ordering the users that are both subscribers to the first user's contact information and publishers of contact information subscribed to by the first user before the users that are not both subscribers to the first user's contact information and publishers of contact information subscribed to by the first user.

65. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining a frequency with which messages are exchanged in a chat room between the first user and each of the users included in the participant list; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined frequencies.

66. The method of claim 65 wherein organizing the users based on the determined frequencies comprises sorting the users in order of decreasing frequency with which messages are exchanged in the chat room with the first user.

67. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining amounts of time for which the first user and each of the users have exchanged messages; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined amounts of time.

68. The method of claim 67 wherein organizing the users based on the determined amounts of time comprises sorting the users in order of decreasing amount of time for which messages have been exchanged with the first user.

69. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining amounts of contact information for the first user held by each of the users and amounts of contact information for each of the users held by the first user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined amounts of contact information.

70. The method of claim 69 wherein organizing the users based on the determined amounts of contact information comprises sorting the users in order of decreasing amount of contact information held for or by the first user.

71. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining whether each of the users both sends messages to the first user and receives messages from the first user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determinations of whether each of the users both sends messages to the first user and receives messages from the first user.

72. The method of claim 71 wherein organizing the users based on the determinations of whether each of the users both sends messages to the first user and receives messages from the first user comprises sorting the users such that users that both send messages to the first user and receive messages from the first user are ordered before users that do not both send messages to the first user and receive messages from the first user.

73. The method of claim 48 wherein:

determining the communications strengths between the first user and each of the users comprises determining communications strengths between each of the users and a second user; and

organizing the users based on the corresponding communications strengths comprises organizing the users based on the determined communications strengths.

74. The method of claim 73 wherein organizing the users based on the determined amounts comprises sorting the users in order of decreasing communications strength.

75. The method of claim 48 further comprising removing the users with a communications strength below a minimum allowable communications strength from the participant list.

76. The method of claim 48 wherein the participant list is a buddy list of an instant messaging system.

77. The method of claim 48 wherein the participant list is an address book of an e-mail system.

78. The method of claim 48 wherein the participant list is a social network of the first user.

79. The method of claim 48 wherein the electronic communications system is an instant messaging system.

80. The method of claim 48 wherein the electronic communications system is a chat system.

81. The method of claim 48 wherein the electronic communications system is an e-mail system.

82. A machine-accessible medium that when accessed, results in a machine performing operations for organizing a participant list, comprising:

maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system;

determining communications strengths between the first user and each of the users included in the participant list; and

organizing the users included in the participant list based on the corresponding communications strengths.

83. A system for organizing a participant list, the system comprising:

means for maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system;

means for determining communications strengths between the first user and each of the users included in the participant list; and

means for organizing the users included in the participant list based on the corresponding communications strengths.

84. A computer program stored on a computer-readable medium or a propagated signal that, when executed, generates a graphical user interface on a display device for using a computer to manage a list of users of an electronic communications system with which electronic messages may be exchanged, the graphical user interface comprising:

a participant list display associated with a user of the participant list display that includes users of an electronic communications system, the users being organized in the participant list display based on communications strengths between the user and each of the users.

85. The computer program of claim 84 wherein:

the participant list display includes groups that are associated with one or more of the users included in the participant list display; and

the one or more users associated with a group included in the participant list display are organized within the group based on communications strengths between the user and each of the associated users.

86. The computer program of claim 84 wherein the participant list display includes a group associated with the users included in the participant list display within which the associated users are organized based on communications strengths between the user and each of the associated users.

87. The computer program of claim 84 wherein the participant list display includes a group associated with the users included in the participant list display that have high communications strengths with the user; the users associated with the group being organized based on communications strengths between the user and each of the associated users.

88. The computer program of claim 84 wherein the participant list display is a display of a buddy list associated with an instant messaging system.

89. The computer program of claim 84 wherein the participant list display is a display of an address book associated with an e-mail system.

90. A method for announcing new users of an electronic communications system, the method comprising:

receiving an indication of a new user of an electronic communications system, wherein the new user has an identifier for the electronic communications system; identifying existing users of the electronic communications system that are known to the new user; and sending the identified existing users a message notifying the identified existing users of the identifier of the new user.

91. The method of claim 90 further comprising enabling the identified existing users to add the identifier of the new user to participant lists used by the identified existing users.

92. The method of claim 90 further comprising enabling the new user to add identifiers of the identified existing users to a participant list of the electronic communications system used by the new user.

93. The method of claim 92 further comprising determining the identifiers of the identified existing users.

94. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying identifiers of the electronic communications system that correspond to the identified existing users.

95. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying existing users that are included in a contact list maintained by the new user.

96. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying existing users of the electronic communication system that include the new user in contact lists maintained by the existing users and that are included in a contact list maintained by the new user.

97. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying existing users of the electronic communications system that are less than a maximum allowable number of degrees of separation away from the new user.

98. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying existing users of the electronic communications system with which the new user has exchanged more than a threshold number of messages.

99. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic

communications system that have exchanged messages with the new user at a frequency that exceeds a threshold frequency.

100. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system that are subscribers to contact information of the new user or publishers of contact information to which the new user subscribes.

101. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system that have exchanged messages with the new user in a chat room at a frequency that exceeds a threshold frequency.

102. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system that have exchanged messages with the new user for longer than a threshold amount of time.

103. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system for which the new user holds an amount of contact information that exceeds a threshold amount, or that hold the an amount of contact information for the new user that exceeds the threshold amount.

104. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system that that both send messages to the new user and receive messages from the new user.

105. The method of claim 90 wherein identifying the existing users that are known to the new user comprises identifying the existing users of the electronic communications system that have a communications strengths with a different user that exceeds a threshold communications strength.

106. The method of claim 90 wherein the participant list is a buddy list of an instant messaging system.

107. The method of claim 90 wherein the participant list is an address book of an e-mail system.

108. The method of claim 90 wherein the participant list is a social network of the user.

109. The method of claim 90 wherein the electronic communications system is an instant messaging system.

110. The method of claim 90 wherein the message notifying the existing user is an instant message.

111. The method of claim 90 wherein the electronic communications system is a chat system.

112. The method of claim 90 wherein the electronic communications system is an e-mail system.

113. The method of claim 90 wherein the message notifying the existing users is an e-mail message.

114. A machine-accessible medium that when accessed, results in a machine performing operations for announcing new users of an electronic communications system, comprising:

- receiving an indication of a new user of an electronic communications system, wherein the new user has an identifier for the electronic communications system;
- identifying existing users of the electronic communications system that are known to the new user; and
- sending the existing users a message notifying the identified existing users of the identifier of the new user.

115. A system for announcing new users of an electronic communications system, the system comprising:

- means for receiving an indication of a new user of an electronic communications system, wherein the new user has an identifier for the electronic communications system;
- means for identifying existing users of the electronic communications system that are known to the new user; and
- means for sending the identified existing users a message notifying the identified existing users of the identifier of the new user.

116. A computer program stored on a computer-readable medium or a propagated signal that, when executed, generates a graphical user interface on a display device for using a computer to manage a list of users of an electronic communications system with which electronic messages may be exchanged, the graphical user interface comprising:

- a participant list display associated with a user of the participant list display that includes users of an electronic communications system, one or more of the users being

included automatically in the participant list display as a result of the user receiving indications identifying the one or more users as new users of the electronic communications system.

117. The computer program of claim 116 wherein:

the participant list display includes groups that are associated with one or more of the users included in the participant list display; and

a group included in the participant list display is associated with the one or more automatically included users.

118. The computer program of claim 116 wherein the participant list display is a display of a buddy list associated with an instant messaging system.

119. The computer program of claim 116 wherein the participant list display is a display of an address book associated with an e-mail system.

120. A method for categorizing users, the method comprising:

maintaining a list of identifiers that are selected by a first user and for which online presence information is made perceivable through the list, the list including one or more categories into which the identifiers are categorized;

accessing at least one attribute associated with an identifier for which online presence information is to be made perceivable through the list;

accessing attributes stored relative to at least one of the categories;

comparing the attributes associated with the identifier to the stored attributes;

based on results of the comparison, identifying at least one category within the list that corresponds to the identifier; and

categorizing the identifier into the identified category.

121. The method of claim 120 wherein identifying at least one category that corresponds to the identifier comprises adding to the list a category to which the identifier corresponds.

122. The method of claim 120 wherein identifying at least one category that corresponds to the identifier comprises identifying at least one category into which the identifier is not categorized that corresponds to the identifier.

123. The method of claim 120 wherein identifying an attribute of the identifier comprises identifying an attribute associated with the identifier from a profile associated with the identifier.



124. The method of claim 123 wherein identifying an attribute associated with the identifier from a profile associated with the identifier comprises identifying an attribute of a user associated with the identifier from a profile of the user.

125. The method of claim 120 wherein accessing at least one attribute associated with the identifier comprises accessing at least one indication of communications between the first user and the identifier or a user corresponding to the identifier.

126. The method of claim 125 wherein accessing an least one indication comprises accessing at least one indication from a group of indications comprising one or more instant messages sent between the first user and the identifier or a user corresponding to the identifier, e-mail messages sent between the first user and the identifier or a user corresponding to the identifier, and voice over Internet protocol (VoIP) telephone calls between the first user and the identifier or a user corresponding to the identifier.

127. The method of claim 125 wherein:  
accessing at least one attribute associated with the identifier comprises accessing a time at which the first user exchanges messages with the identifier or a user corresponding to the identifier; and

identifying at least one category comprises identifying at least one category reflecting identifiers of users with which the first user communicated within a period of time that includes the accessed time.

128. The method of claim 127 wherein identifying at least one category comprises identifying at least one category reflecting identifiers of users with which the first user communicated during a current day, a previous day, a previous week, or a previous month.

129. The method of claim 125 wherein:  
accessing at least one attribute associated with the identifier comprises accessing a frequency with which the first user exchanges messages with the identifier or a user corresponding to the identifier; and

identifying at least one category comprises identifying at least one category reflecting identifiers of users with which the first user communicated at a frequency within a range of frequencies that includes the accessed frequency.

130. The method of claim 129 wherein identifying at least one category comprises identifying at least one category reflecting identifiers of users with which the

first user communicated at least a particular number of times a day, at least a particular number of times a week, or at least a particular number of times a month.

131. The method of claim 125 wherein:

accessing at least one attribute associated with the identifier comprises accessing a length of one or more messages sent between the first user and the identifier or a user corresponding to the identifier; and

identifying at least one category comprises identifying at least one category reflecting identifiers with which the first user exchanged messages of lengths within a range of lengths that includes the accessed length.

132. The method of claim 131 wherein identifying at least one category comprises identifying at least one category reflecting identifiers with which the first user exchanged messages of at least a threshold length or at most a threshold length.

133. The method of claim 120 wherein:

accessing at least one attribute associated with the identifier comprises accessing a location of a user corresponding to the identifier; and

identifying at least one category comprises identifying at least one category reflecting identifiers of users that are located at the accessed location.

134. The method of claim 120 wherein:

accessing at least one attribute associated with the identifier comprises accessing at least one group within a second list of identifiers that are selected by a first user, the at least one accessed group including the identifier; and

identifying at least one category comprises identifying at least one group within the list that corresponds to the at least one accessed group within the second list as the category.

135. The method of claim 134 wherein:

accessing at least one group within the second list comprises accessing at least one group within an address book of an e-mail system; and

identifying at least one group comprises identifying at least one group within a list of users of an instant messaging system for which presence is monitored that corresponds to the at least one accessed group within the address book.

136. The method of claim 134 wherein:

accessing at least one group within the second list comprises accessing at least one group within a list of users of an instant messaging system for which presence is monitored; and

identifying at least one group comprises identifying at least one group within an address book of an e-mail system that corresponds to the at least one accessed group within the list of users of the instant messaging system.

137. The method of claim 120 further comprising receiving a request from the first user to categorize the identifier into at least one category included in the list based on at least one attribute associated with the identifier.

138. The method of claim 120 wherein the list of users is an address book of an e-mail system.

139. The method of claim 120 wherein the identifier is at least one from a group including an online identity, a name, or an alias for an online identity.

140. The method of claim 120 wherein the one or more categories within a subset of the categories are mutually exclusive such that each of the identifiers is categorized into at most one of the subset of the categories, and categorizing the identifier into the identified category comprises categorizing the identifier only into the identified category among the subset of categories.

141. The method of claim 120 further comprising prompting the first user to accept categorization of the identifier into the identified category, wherein categorizing the identifier comprises categorizing the identifier in response to an indication that the first user accepts the categorization of the identifier into the identified category.

142. The method of claim 141 further comprising enabling the first user to manually categorize the identifier when the first user does not accept the categorization of the identifier into the identified category.

1/15

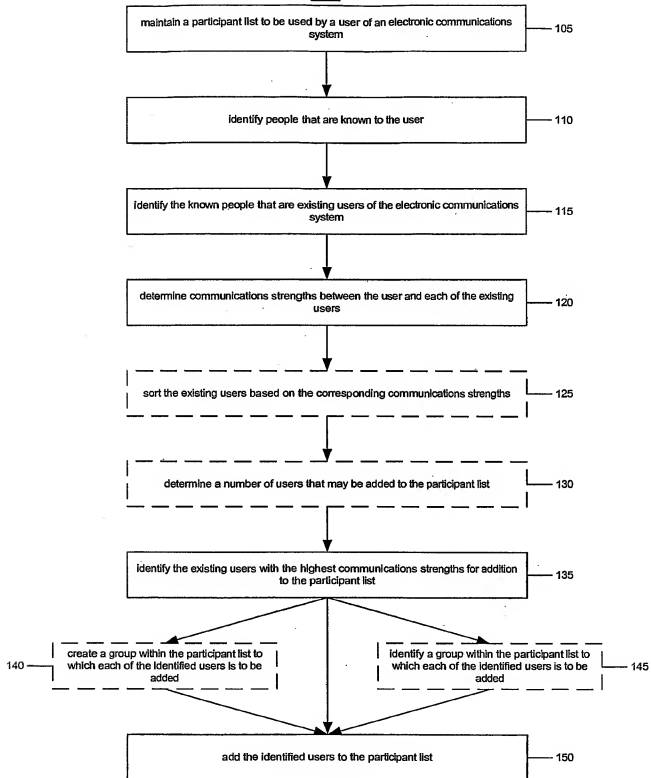
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Figure 1

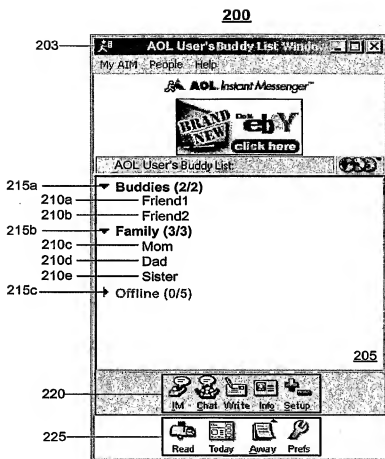


Figure 2A (Before)

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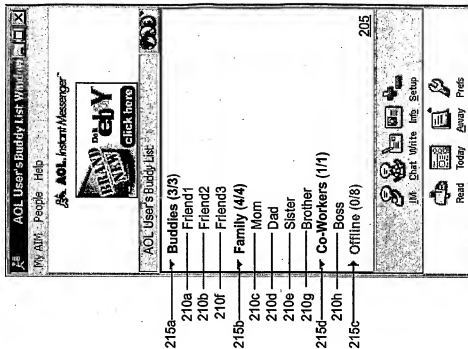


Figure 2C (After)

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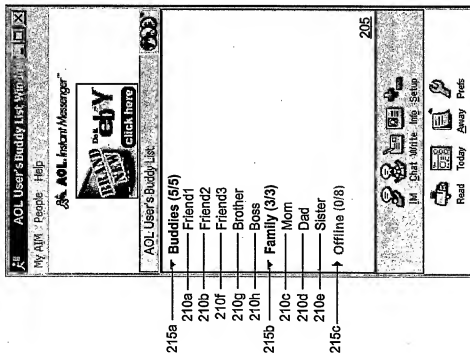


Figure 2B (After)

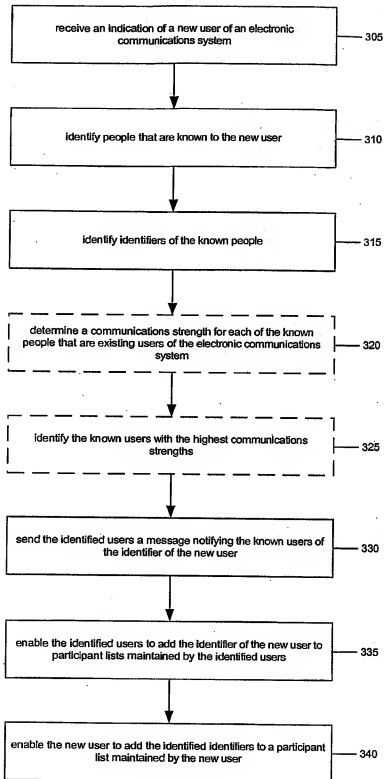
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Figure 3

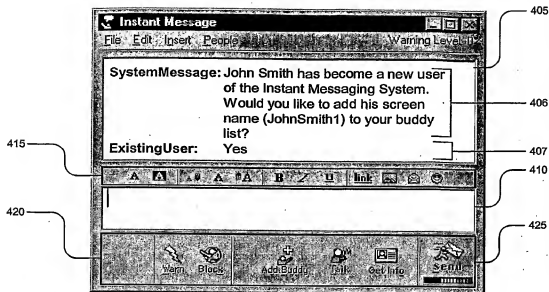
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Figure 4A

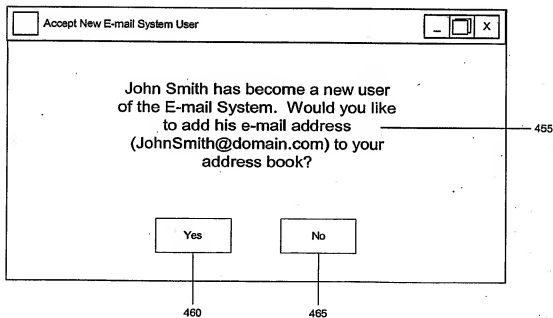
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Figure 4B



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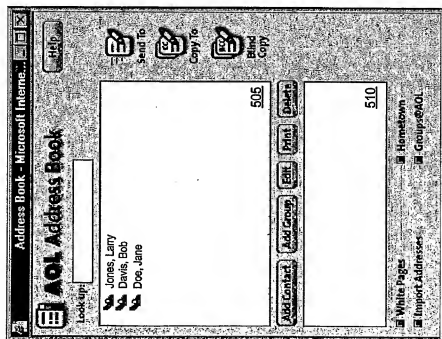


Figure 5A (Before)

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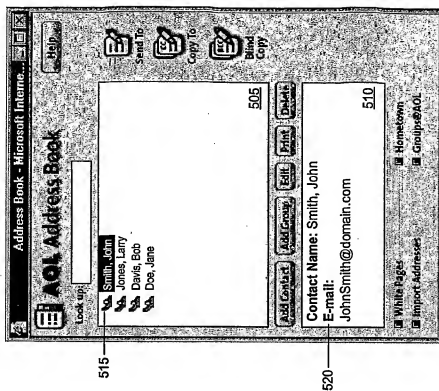


Figure 5B (After)

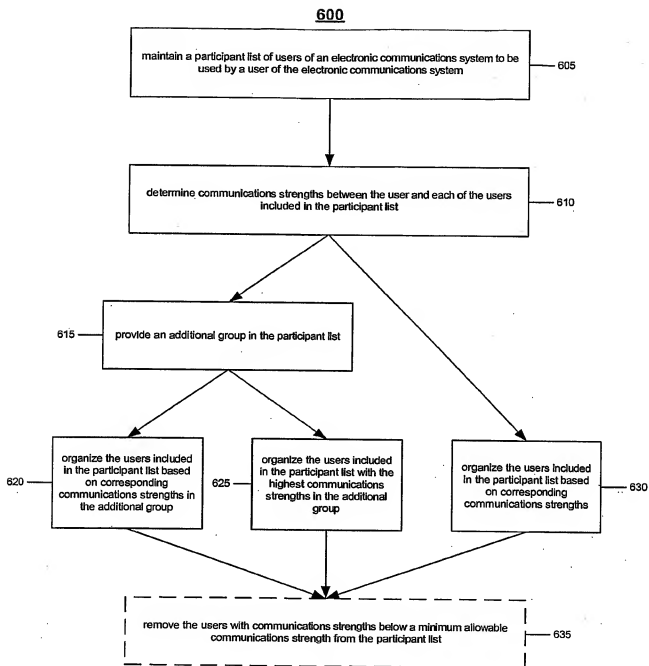


Figure 6

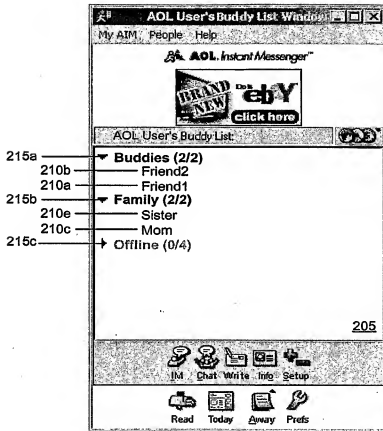
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Figure 7A (After)

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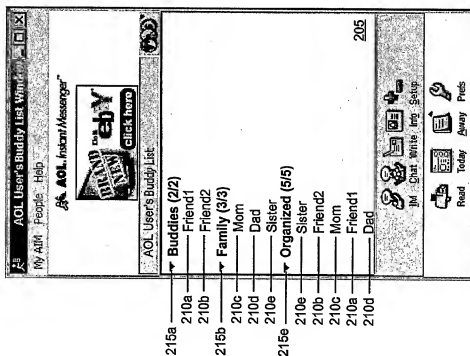


Figure 7B (After)

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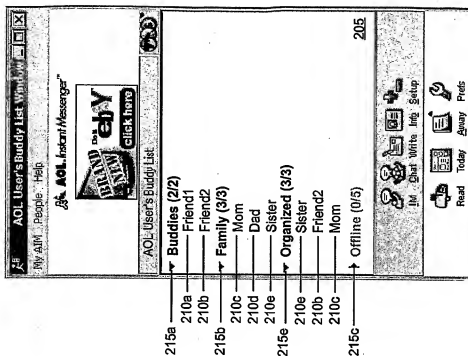


Figure 7C (After)

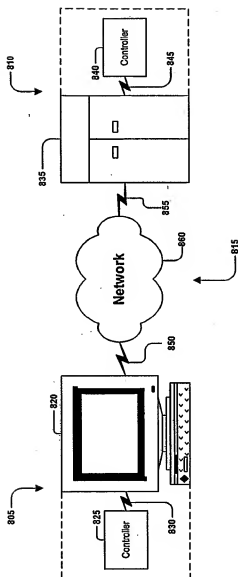
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Figure 8

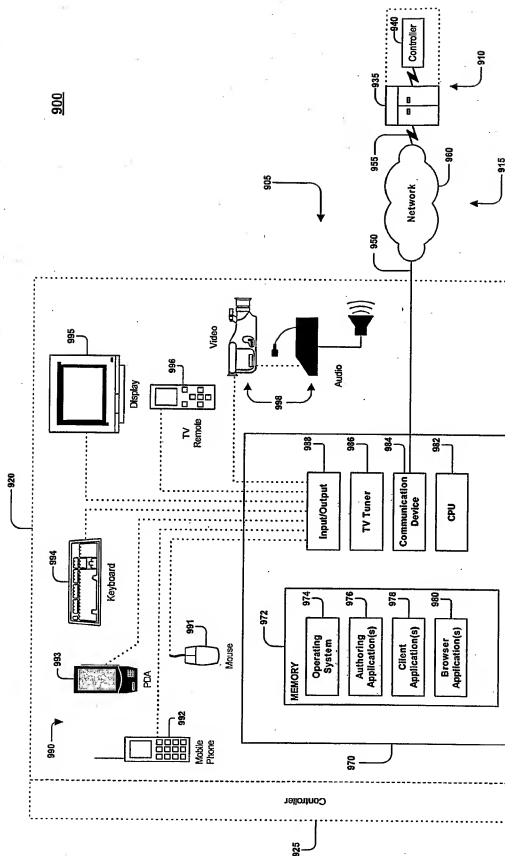
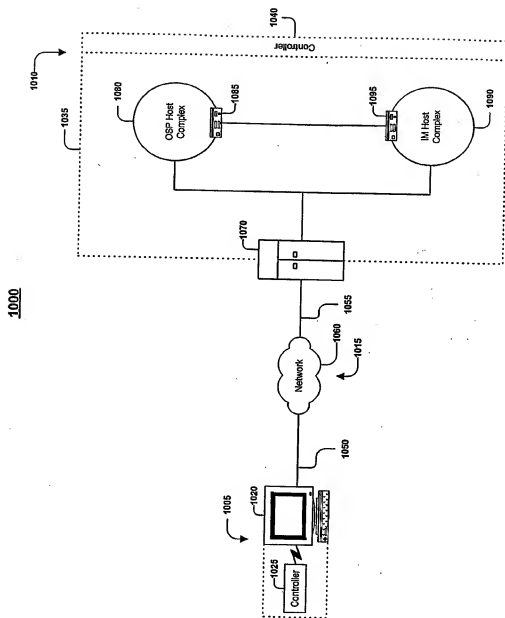


Figure 9



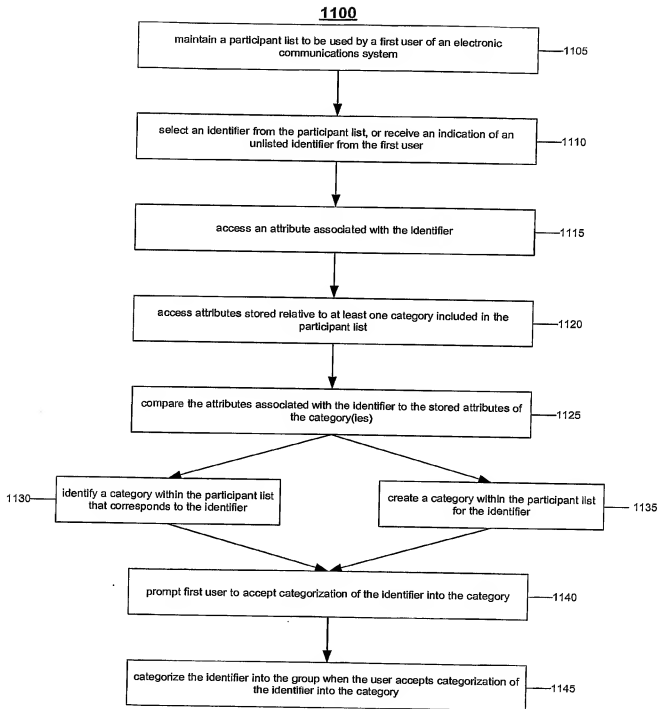


Figure 11



200

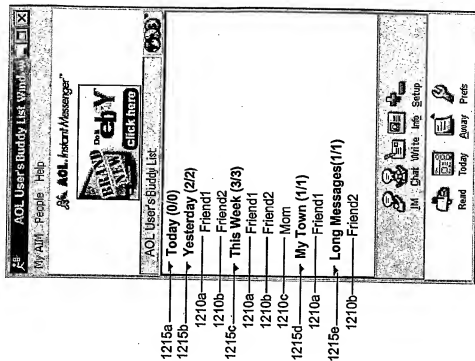


Figure 12B (After)

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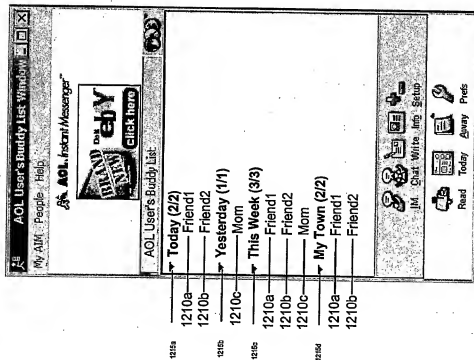


Figure 12A (Before)

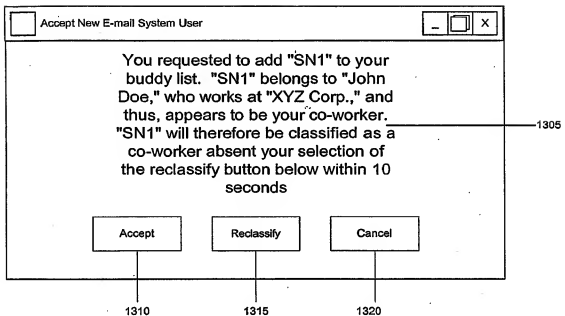
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Figure 13

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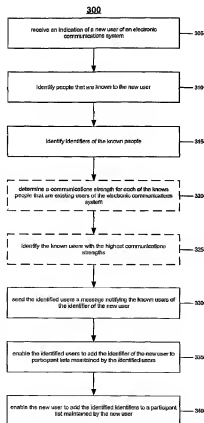
(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

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Filed on 20 December 2004 (20.12.2004)  
US 11/015,476 (CON)

[Continued on next page]

(54) Title: PASSIVELY POPULATING A PARTICIPANT LIST WITH KNOWN CONTACTS



(57) Abstract: Organizing a participant list includes maintaining a participant list of users of an electronic communications system to be used by a first user of the electronic communications system. Communications strengths between the first user and each of the users included in the participant list are determined (320) (325). The users included in the participant list are organized based on the corresponding communications strengths. Communications strengths may be determined for users includes in a group within the participant list, and the users within the group may be organized within the group based on communications strength. An additional group in the participant list in which some or all of the users includes in the participant list are organized based on communications strength may be provided. Additional users may be added to the participant list, based on the communications strengths between the first user and the additional users (330). New users may be added to the participant list in response to notifications of the new users that are sent to the first user (335). Identifiers included in the participant list may be categorized into groups within the participant list based on attributes associated with the identifiers (340).

WO 2005/086723 A3



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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International application No.

PCT/US05/07204

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US CL : 709/206

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 709/204,207; 707/1, 3; 705/1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P	US 2005/0050143 A1 (GUSTER et al.) (03 March 2005 (03.03.2005)), Abstract, Figures 3-6, page 1, paragraph [0009].	1-119
Y, P	US 2004/0215721 A1 (SZETO et al.) (28 October 2004 (28.10.2004)), Figure 4, page 3, paragraph [0034].	37-40, 48-89, 116-119
Y, P	US 2004/0122810 A1 (MAYER) (24 June 2004 (24.06.2004)), Abstract, paragraph [0091].	1-142
Y, P	US 2004/0117443 A1 (BARSNESS) (17 June 2004 (17.06.2004)), Abstract, page 5, paragraphs [0046]-[0047].	48-83, 120-142

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"P" document published prior to the international filing date but later than the priority date claimed	

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15 FEB 2006

Authorized officer

Andrew Caldwell

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**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US05/07204

Continuation of B. FIELDS SEARCHED Item 3:

EAST Search:

Search terms: maintaining, categorizing, sorting, organizing, attendee, attendants, participants, buddy lists, friends, users, instant messaging or IM.